THE BEST SELLING MAGAZINE FOR THE

AMSTRAD PCW

8000 PLUS

8256 • 8512 • 9512

ISSUE 19 • APRIL 1988 • £1.50



WIN A HARD DISC

Enter our competition and banish those floppies forever



World of information

Communications: what you can do and how to do it

PLUS: Complete buyers' guide to spreadsheets, games and graphics packages

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

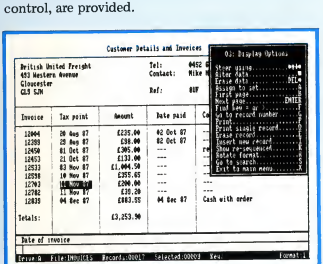
Other products offer a choice between fast but limited-capacity RAM files, and large-capacity but cumbersome fixed-length, direct-access disc files. MASTERFILE 8000 and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With MASTERFILE 8000 you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before — just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically — and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution — you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

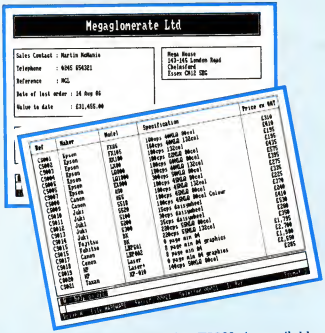


Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word-processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (MASTERFILE 8000 usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.



FIELD-TO-FIELD CALCULATION is available, using any mixture of terms and arithmetic operators + — * / ( ).

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

MASTERFILE 8000 costs £49.95 including VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD orders are welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems".

Our normal response is return of post, 1st class.

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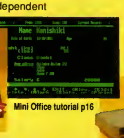
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Three reasons for using LocoScript 2 ...



Better Word Processing

LocoScript 2 is the superior word processor for your Amstrad PCW8256/8512

If you're used to the original LocoScript, you'll be amazed how fast LocoScript 2 can be – moving around documents, jumping to a page, saving then continuing from your old position. LocoScript 2 has a huge range of characters it can print, including modern Greek, Cyrillic and many special scientific characters. You can use accents with any character, and even define16 special characters of your own. In addition, LocoScript 2 supports a wide range of different printers. It has a number of new features too: printing multiple copies; copying discs from within LocoScript; super new find and exchange. And of course, we've improved the manual out of all recognition!

Fewer Mistakes



LocoSpell is the spelling checker and corrector for LocoScript 2

LocoSpell is the ultimate spelling checker for LocoScript 2. Of course it works within LocoScript, so you don't have to swap discs or reset your PCW to use it. On a PCW8512 you can check your spelling against a 78,000 word dictionary, specially created for us by Longmans. But not only does LocoSpell find your spelling mistakes (and typing mistakes), it also can correct them! Every time it finds a misspelled word, LocoSpell presents you with a possible alternative. You can build and maintain your own private dictionaries too, as well as using the (SiC) feature to mark special words which are not spelling mistakes. You can also use LocoSpell just like a dictionary – if you are not sure how to spell a word, just look it up!



More Adaptability

LocoMail is the mailmerge program for LocoScript 2

With LocoMail you can write a letter once, then send personalised copies to all your friends or business contacts – anyone in a mailing list, in fact. Your data files can contain simple names and addresses or more sophisticated information, such as costs and expenses. There is a great deal of flexibility in how the data can be incorporated into your letters – each letter is reformatted to take account of the variable information you insert (no nasty gaps to reveal that it's a mailshot!) You can produce letters for all the names and addresses, or just a selection – automatically. You can even do arithmetic and write simple "programs". Whether you use LocoMail simply for a mailshot, or in a sophisticated way for invoicing, you'll wonder how you managed without it! Note: New packaging illustrated will be available late February 1988.

... and the fourth reason is the price!

LocoScript 2 *£19.95* ■ LocoSpell *£19.95* ■ LocoMail *£29.95*

Buy LocoScript 2 and LocoSpell together – *and save £5!*

To: Katy Buchan, Locomotive Systems,
Allen Court, Dorking, Surrey, RH4 1YL
Phone (0306) 887902

Name _____

Address _____

_____

Postcode _____

Please send me the following products

- ☐ LocoScript 2 £19.95
- ☐ LocoSpell for LocoScript 2 £19.95
  requires LocoScript 2.03 or later, enquire for details of free upgrade.
- ☐ LocoScript 2 with LocoSpell £34.90
- ☐ LocoMail £29.95

Total _____

- ☐ I enclose a cheque payable to Locomotive Systems Limited
- ☐ Charge to my Access Card

Note: All prices include VAT and UK postage. Please enquire for export terms.

Making the news?

The news pages of all magazines – and 8000 Plus is no exception – tend to be made up from press releases received over the course of the month. Although we do our best to research most of the stories, announcements of new products have to be taken on trust. We think you'd like to hear of forthcoming developments at the earliest opportunity, so we don't insist on seeing samples of products until we actually review them later on.

Last month we ran a news story on page 8 headed 'Vital Organiser', all about an exciting new desktop organiser-cum-programmer's aid program called WIMOS. Since then we've received a sample from makers Digital Software, and as the original news item was fairly positive we feel some extra comment is necessary before any of you rush to buy it.

Quite apart from what we thought were some fundamental design flaws, the simple fact is that WIMOS is largely composed of ideas taken from BASIC listings published in 8000 Plus. In particular, our Pull Down Menus (issue 7) and Graphs Package (issue 8) listings are used almost unchanged.

While listings we publish are intended to be adapted by you for your own use, reselling them for £39.95 is definitely infra dig.

Mini Office winners

The Mini Office Professional competition from issue 17 has now drawn to a close. With the help of our 10 winners – whose names are being kept secret until the last paragraph – Date-a-Mate's manageress, Catherine MacPseudonym, has sorted out her Valentine's Day mailing list.

The correct answers were:

D0 – C, "Miss J.A. Smith"
D1 – E, "4 Marie Stopes Way"
D2 – F, "Batty"
D3 – G, "Avon"
D4 – B, "Jane"
D5 – J, "Merchant Banking"

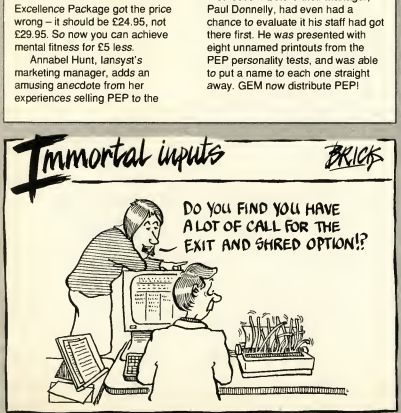
And the winners are: **V.E. Kille**, Roslea, Co. Fermanagh; **R.E. Bona**, Iver, Bucks; **Geoffrey D. Genever**, Sevenoaks, Kent; **F.M. Jones**, Maghull, Merseyside; **J. Laws**, Hassocks, Brighton; **Dr. E.J. Ladusans**, Harefield, Middx; **Mrs. S. Higgins**, Gravesend, Kent; **V. Wyatt**, Burley, Leeds; **Mr. P.G. Winrow**, Spondon, Derby; **R. Legett**, Carmarthen, Dyfed.

A copy of Mini Office Professional is on its way to each of you with our congratulations. Our thanks to Database Software for helping to arrange the competition.

Cheaper excellence

It's correction time again. Iansyst have asked us to point out that last month's review of their Personal Excellence Package got the price wrong – it should be £24.95, not £29.95. So now you can achieve mental fitness for £5 less.

Annabel Hunt, Iansyst's marketing manager, adds an amusing anecdote from her experiences selling PEP to the distribution trade. One company she offered PEP to was GEM Distribution. Before their manager, Paul Donnelly, had even had a chance to evaluate it his staff had got there first. He was presented with eight unnamed printouts from the PEP personality tests, and was able to put a name to each one straight away. GEM now distribute PEP!



COME THE REVOLUTION

This month's cover feature is all about the world of computer communications. Now normally this editorial column steers fairly clear of the issue's main features – you can read enough about them in the magazine – but in this case I'd like to add a few personal comments.

Ever since personal computers burst upon the scene in the late 1970s, communications has been the Walter Mitty dream of all entrepreneurs. Amstrad have included a built-in communications setup in their new portable IBM compatible computer, presumably with the intention that businessmen are going to sit in their hotel rooms plugged into the global information network.

The idea of everyone going to their nearest wall phone socket, plugging in and instantly having access to the the Encyclopaedia Britannica is very alluring. I for one agree wholeheartedly with the general feeling that speeding up access to information will revolutionise society in the near future.

But not just yet. Consider this: when I want to access 8000 Plus's Telecom Gold mailbox, here's what I do. I decide whether to use 300/300 baud or 1200/75 baud; then look up in a book the correct phone number to dial depending on the speed I chose; push the buttons on my modem to set the speed; dial the number and wait for a connect tone. Then type [RETURN], [RETURN], A2, NTLGOLD901TYM, A21920100484, ID TXT152, then my password. Simple, eh?

Before the letters start to flood in, it is true that with the right software and hardware you can generate all this initialisation jargon automatically, but you've still got to know enough to set up the automatic sequence in the first place.

Once you've passed the gobbledegook stage and got going on Telecom Gold, your troubles aren't necessarily over. Telecom Gold is a computer, so the business of sending mail and quizzing databases requires you to learn a whole new set of commands, like a new CP/M.

I'm a dedicated fan of the information technology expansion, but I'm also a dedicated fighter against badly designed systems. If communications is to really make it big, then we've got to have a system of common standards so that you can simply plug in your computer and start sending and receiving information. To expect people to battle through technical jargon like 'baud rates', 'parity', 'stop bits' and 'Xon/Xoff' is absurd.

Computer communications is a vital and useful service – as I hope our article explains. Let's hope it soon becomes a bit easier to use.

Ben Taylor.

8000 PLUS

8000 Plus is moving to the fourth Thursday of each month. Watch out for the May issue, on sale Thursday 28th April.

8512 price rises

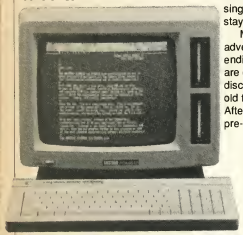
Amstrad have announced to dealers that as from 1st May the price of the 8512 will rise by £50 to £449 plus VAT. The 8256 and 9512 remain unchanged at £299 and £499 plus VAT respectively.

Amstrad put the price increase down to the increase in cost of DRAM – the special chips used for the PCWs memory. The 8512 uses 16 DRAM chips, twice as many as the 8256. The 9512 uses the same amount of DRAM as the 8512, so a future price hike on the 9512 can't be ruled out.

At the moment there is an international shortage of memory chips, because the Japanese manufacturers were forced to cut back production following US Federal import restrictions.

Amstrad's Marketing Director Malcolm Miller said, "A year ago we were paying $1.50 for a 256k RAM chip. Today the price has risen to $3.75. We can no longer realistically absorb this additional cost as we have been doing for the last year. We've kept the rises to a minimum, and the entry level single-disc machines are staying at their old prices."

Meanwhile, in a nationally advertised promotional scheme ending on 30th April, Amstrad are offering 9512 buyers a £50 discount when bringing in their old typewriter in part exchange. After that it goes back to its pre-promotion price.



◀ The 8512 – up to £516.35

Yuppiedom

The ultimate accolade has been bestowed on PCW owners. Two companies have just launched personal organiser packages for the PCW which will print out information for clipping into a small loose-leaf ring binder not unlike ones that rhyme with the word Pilofax.™

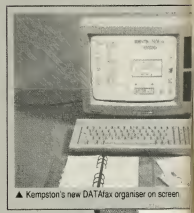
Kempston Data (0908 6910018) have developed 'DATAfax', a PCW based personal organiser that proudly claims to produce output from the standard PCW printer that is compatible with a Filofax™.

It includes a diary, a notepad, a telephone/address book and a calendar – all of which print out (in condensed mode) on to specially perforated continuous stationery.

The diary prints out four days per page and has a cut and paste facility to allow you to copy from other parts of the diary. The notepad is set up with tab settings useful for printing time tables, expense sheets and bank balances. You can use a search facility to find entries in the address book.

The program alone can be bought for £39.95, or for £49.95 with a grey binder and a supply of continuous paper.

HPA Systems (08697 508), the



▲ Kempston's new DATAfax organiser on screen

Getting it in proportion

Amstrad now sell a new 9512 daisywheel to complement the 8 existing print styles available. Called the Thesis PS wheel, the characters have been specially designed to be used with proportionally spaced text. Characters on the standard 9512 wheel, Prestige 10, tend to overlap and look wrongly spaced if used for PS work.

The Thesis PS wheel should be available from all Amstrad stockists at the normal price of £5.81.

Colour printer launched

Star Micronics (01-840 1800) have developed a colour version of their LC-10 dot matrix printer. Selling for £297.85 including VAT, the LC-10 can print ordinary black text at a claimed 144 characters per second (draft) and 36 cps (high quality). With the correct ribbons it can print in seven colours – although only if your software gives the printer the correct 'change colour' commands. Colour ribbons cost £6 each, and there's an A4 sheet feeder available at £75.



Keyboards revitalised

Probably the most serious problem afflicting ageing PCWs is fading keytops. Until now the best answer was to learn to touch type. However, the Mira Group, a new PCW user group, has come up with an inexpensive answer – a DIY repair pack costing only £15.

The Mira kit not only includes replacements for all the characters, it also has a liquid to coat the keys and give protection against future wear and tear. For details on the keyboard kit, contact A D Waring, 577 Huddersfield Road, Dewsbury, WF13 3JW, tel 0924 462670.

Caxton quit PCW market

In what they call a 'rationalisation of their market', Caxton have stopped publishing software for the PCW. Their product list included such well-known names as Brainstorm (an ideas processor), Cardbox (database) and Touch'N'Go (a touch typing tutor). Caxton, a subsidiary of big computer systems specialists Digitas, have totally bowed out of the personal computer scene to concentrate on the other side of their business.

Although most of their products seem to have reverted to their original authors and continued support may be available for existing users (to fulfil contractual obligations) it is not certain whether all the titles will continue to be published. Residual stocks are likely to be available for a few months from dealers.

Brainstorm Software Ltd (0895 677845), the authors of the Brainstorm ideas processor, have announced that they will continue to provide support to existing users. Director D.C. Tebbutt has also said they shortly be releasing a revised version of Brainstorm with easier to use command keys.

Business Simulations Ltd (0892 863105), the authors of Cardbox and Cardbox Plus have also revealed that they will be continuing to produce Cardbox Plus (£99.95), the card index database for the PCW. However, they will be discontinuing the original and cheaper Cardbox (which doesn't have the ability to sort data).

For information on Caxton's other PCW products, Condor 1, Scratch Pad Plus and Touch'N'Go, it is best to get in touch with the Caxton help line 01-251 9494.





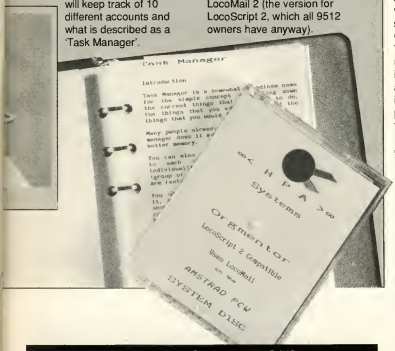




Arrives!

LocoMail specialists, have also launched their 'Orgmentor'. This provides a diary generator, a forms generator and a telephone/address database and page generator. It also contains a Money Management system that will keep track of 10 different accounts and what is described as a 'Task Manager'.

Orgmentor works by cunning use of LocoMail commands, so runs totally within LocoScript's friendly environment. The Orgmentor software is available for £19.95, or £29.95 with a Twinlock file. You need to have LocoMail 2 (the version for LocoScript 2, which all 9512 owners have anyway).



Learning from a PCW

Unemployed people in Nottingham are learning valuable business communication skills through a new Open Learning package using a PCW. Icon Communication (0602 483839) in conjunction with the Manpower Services Commission have provided free PCWs and the necessary software for the first 20 trainees to carry out the course at home.

The course includes ready made models for CV's, business letters, proposals, desk top publishing and a self-teaching program. It's aimed at increasing writing and communication skills in business; all contact with tutors is through the post and at the end participants can sit a Communications in Business exam.

The MSC covers the cost of the computer and software for the participants and small businesses can also benefit by applying for a grant from the MSC. They hope that the scheme will be made available throughout the country.



▲ The first of the trainees at the introduction to MSC/Icon's new open learning package

Killer discs?

If you read the general computer press these days, you may have seen one of the many scare stories about 'disc viruses', 'time bombs' or 'electronic AIDS'. Even the Guardian, in its computer page recently, investigated the rumours.

In brief, the story is as follows. It appears that a practical joker with a viscious sense of humour hid a small program on the disc of a Commodore Amiga computer. Whenever this disc was put in the machine, the program would copy itself into the computer's memory, and when any other discs were put in the disc drive later on the program would copy itself back onto them. In this way, soon every disc a user had would have the program on it.

The sting is that the program, apart from duplicating itself, was set up so that after it had been run, say, 10 times, it would totally erase all files on its disc. After a while, you would mysteriously start losing valuable data; even backup discs would be infected, and whenever you put a disc into your machine you wouldn't know whether you were about to lose everything on it.

Because computer users often exchange discs, the destructive 'virus', as it has become known, soon spread. The only way to be safe was never to borrow software from friends – if you stuck to genuine unpirated program master discs and brand new blank data discs, you were safe enough.

Since the Amiga virus – which was first reported in late 1987 – a similar kind of thing has appeared on several other machines, principally IBM PCs. If a virus gets into your system the first thing you usually know is that your discs mysteriously become blank, and by then it's too late.

We only print this story for the information of readers who may have heard uninformed rumours from other sources – to date we haven't heard of any virus going round on the PCW. David Langford, our regular columnist, points out in his page this month that PCW owners are relatively safe because the machine is hardly known in America (where most of these friendly hackers hang out), and also because LocoScript is such a peculiar program that it would be extremely hard to design a working virus.

If you do find your data discs



"I MUST BE ONE OF THOSE VIRUS PROGRAMS..."

apparently being corrupted with the dreaded 'Missing address mark' error message, it's far more likely to be a simple hardware fault or a stray magnetic field causing the trouble.

And honestly, this isn't our April Fool story – you'll have to look elsewhere for that!

Cloth ribbons for 9512

The best and the worst thing about the PCW 9512 is its print quality. The daisywheel printer can produce lovely crisp text from its carbon film ribbon, but the trouble is that in a busy office you can get through a ribbon a week or more. At over a fiver a go, that's no joke, and of course you can't re-ink carbon film ribbons.

At last you can buy conventional cloth ribbons for the 9512. Although they don't provide the crisp 'electric typewriter' look to text that the carbon ones do, they last longer, fade gracefully to grey as they age rather than just stopping in mid-word, and can be re-inked (providing the re-inking companies can oblige).

The source of these ribbons is SBS Computer Supplies (0273 726331), and they are retailing at £4.25. SBS say their ribbon is a continuous loop 13 metres long, so it should last a good long time.

Communications commotion



▲ Microlink's £169 modem

In the course of organising our communications feature this month, we've received a flurry of news about new comms products, not all of which arrived in time to make it into the article.

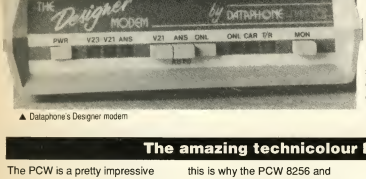
Most notable are two low price all-in communication packages from Microlink (0625 878888). A simple entry level modem with two speeds suitable for Telecom Gold and Prestel use (300/300 and 1200/75 baud) is selling for £99. A multi-speed modem with the faster 1200/1200 baud rate, auto-answer/auto-dial and full Hayes compatibility is going for £169. The simple modem is in fact a rebadged Pace Nightingale modem, and the up-market one a Pace Linnet.

In the Microlink packages you also get the connecting leads you need, a software package which is effectively the communications and word processor modules from Mini Office Professional, and a month's free use of Telecom Gold. If you need you can buy the PCW serial interface module with the package at £39.95 (almost half price). All prices include VAT.

Microlink are also offering a 'Try Before You Buy' service. Modem owners thinking of subscribing to Microlink can logon directly for "a free interactive demonstration." All you need is a 1200/75 baud modem to use the Dial-a-Demo facility on 01-583 1275. Once online simply key `CALL 72` at the >PAD prompt. When asked to sign on key `ID MAG111`. Use the password `DATABASE` to get access and bring up the menu, and you can then browse through the four sections – communications, information, services and leisure.

Also aimed at setting new users up with a complete package is the 'ProPak' from Micronet, the Prestel service (01-278 3143). This package again comes with a rebadged Pace Linnet (obviously fast becoming the standard modem!), specially enhanced PMS Dialup software, connecting cables, serial interface and a year's subscription to Micronet, Prestel and Telecom Gold all for £218.95 inclusive.

Another new modem on the market is the Designer from Dataphone Ltd (0733 230240). An enhanced version of their Demon II, with full manual control too, the Designer sells for £114.94.



▲ Dataphone's Designer modem

The amazing technicolour PCW

The PCW is a pretty impressive word processor, but it hasn't really ever taken off as an entertainment machine. One of the main reasons is surely that it can't display graphics in colour.

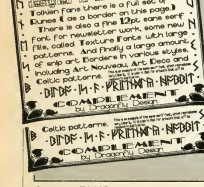
However, all that could be set to change with a new program from graphics specialists Kolor-Soft. 'KolorKit', as it is called, works by exploiting a well known optical illusion whereby the human eye can be fooled into seeing colours if the image it is looking at is flashing at a certain rate. A picture flashing at 34.5 times a second looks red, 62.7 times a second gives blue, and 50 times a second gives green. (Incidentally, this is why the PCW 8256 and 8512 screens look green, because the mains frequency which controls the screen is 50Hz. The 9512 has a special frequency step-down to make the screen appear white.)

KolorKit is a very subtle piece of programming which modifies the PCW's startup disc. A range of extra CP/M functions are available which control by software how fast the screen flashes, and hence what colour you see. You access the commands by 'escape codes' from your programs, so from BASIC if you type `PRINT CHR$(27)+"2"+"RED"`, the screen turns red.

If you set up different windows on your screen you can have one window red and another blue. In this way you can highlight individual words in different colours.

KolorSoft's Japanese technical director, Mr. Joki Sonyu, commented, "Admittedly the colours obtained through KolorKit are not as natural and sharp as ones on true colour screens, but we feel sure that the PCW software houses will rise to the challenge and write programs using KolorKit's facilities."

Mr. Sonyu hopes KolorKit will be available through High Street retail outlets from the first week in April.



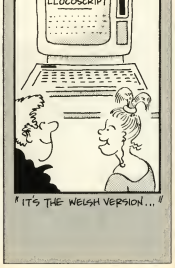
Fonts for all

Dragonfly Designs of Horsford, Norfolk, are establishing themselves as purveyors of fine fonts and designs to the desktop publishing industry. For some time they have offered Complement, an enhancement disc of fonts, frames and clip-art for Electric Studio's Newsdesk International, and now they have extended their range to cover all four PCW DTP programs.

The best of the new versions is for AMS's new Stop Press package. Like Newsdesk, the Stop Press Complement provides 11 true fonts based on a detailed 32x32 pixel grid. Mirrorsoft's Fleet Street Editor and Database's The Desktop Publisher only have 16x16 character design grids, which aren't detailed enough for Dragonfly's designs, so the new characters for these two are provided in the form of clip art which you use much in the fashion of traditional rub-down Letraset.

All versions of Complement cost £12.50. For details contact Dragonfly Designs at 58 The Shrublands, Horsford, Norfolk NR10 3EL.

Eager to refute allegations of nationalism, Locomotive Systems have just released a Welsh version of LocoScript 2 complete with Welsh menus and Welsh manual – all for £29.95. There was an important announcement telling us why it was being released, but we couldn't read it because it was in Welsh.



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POWER TO DRAW ON

Graphics from BASIC? It's true – add dozens of commands to your programming repertoire with Lightning BASIC. Rob Ainsley hacks through it.

LIGHTNING BASIC

£19.95 ● CP Software (0993 823496) ● All PCWs

Surveys show that around half the people who own PCWs do some sort of regular programming. Remember the trembling excitement of your first `PRINT "Hello"` command? That special magic of writing a program and seeing the computer actually do what you tell it?

For all the sneering comments of 'real programmers' who will tell you that you ought to be programming in a fancy language like Pascal or C, BASIC is still an easy-to-use and powerful programming tool, and it can do anything your Pascals and Cs and Forths can do plus a lot more besides. You can write your very own programs to tackle anything from simple games to keep the kids amused up to five thousand line database-cum-accounting programs that do all your business paperwork for you.

After a while though, the strictly text-only nature of BASIC can get frustrating. Instead of rows of figures and words, it would be much better to have diagrams, icons and graphics to adorn your programs, and pie-charts or bar-charts to illustrate your figures. A few screen effects – reversed out boxes to simulate menus, controlled screen positioning of your text and so on – also help to make your program look more professional.

But there's a problem. Although Mallard BASIC can print text anywhere on the screen, there are no commands to plot high resolution graphics. The PCW's screen is made up of 720 by 256 dots, and if you could only work out how, you could create some really impressive detailed graphics.

Lightning Basic is a very clever add-on to normal BASIC which gives you all those screen effects in simple BASIC commands, no machine code needed. Some of Lightning's commands are merely simplified versions of effects you could achieve anyway by skilled use of complex BASIC commands, eg. to print text in reverse video. Others are special commands which you just couldn't do normally, eg. to draw lines, set up sprites and icons and create new character sets.

Lightning machine code?

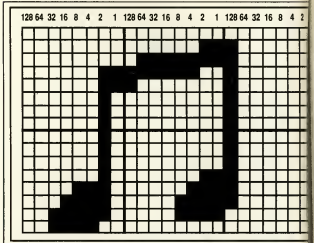
Lightning BASIC is essentially a BASIC adaptation of CP Software's 'All You Ever Wanted To Know About Graphics, The Universe And Everything, But Were Afraid To Ask' (mercifully called AYE for short). AYE has much the same functions but is written in Z80 assembler. This makes it more useful for machine code programmers and Pascal/C fans. AYE costs £24.95



⚠ You have three character sets available in Lightning

LET there be lightning

Getting access to Lightning's extra commands is very straightforward – you run BASIC from your usual disc, put the Lightning disc in the drive and type `RUN "LIGHT1`. After a couple of seconds you're back at the Ok prompt. You can now type in, run, edit and save programs as normal, but a number of extra commands are available.



⚠ Mapping out your 3-byte-by-16-pixel (3x2 characters) sprite – the numbers at the top of each column are used in working out the numbers to use in creating the sprite

For example, typing `LEB cls` will clear the screen; `LEB invert` inverts the screen colours, ie. to black-on-green; `LEB linedraw` followed by a suitable combination of numbers will draw a straight line between any two points on the screen. A very clever feature makes it possible to shorten these command lines by the # key, so that putting `#1` has the same effect as `LEB invert`, `#c` as `LEB cls` and `#l` as `LEB linedraw`. When you LIST your program, you'll see that anything typed in in its short form comes out in the full form in the listing.

Lightning works by commandeering BASIC's redundant LET command – 'LET x=500' and 'x=500' have exactly the same effect, so the writers of Lightning BASIC have hacked it. Where LET was, the commands of Lightning now reside.

There are three levels to Lightning BASIC, imaginatively called LIGHT1, LIGHT2 and LIGHT3. LIGHT1 contains the everyday commands you'd most often use – you can clear the screen, position the cursor, restrict printing to 'windows' of any width or height on the screen, turn the cursor off and on, etc. Some of these functions can be done in normal BASIC with escape codes (they're listed on page 140 of the

krutza qoph jynx fled cwm brigs
KRUTZA QOPH JYNX FLED CWM BRIGS
krutza qoph jynx fled cwm brigs
KRUTZA QOPH JYNX FLED CWM BRIGS
krutza qoph jynx fled cwm brigs
KRUTZA QOPH JYNX FLED CWM BRIGS

CP/M manual) though it's much more convenient putting `#a,10,25` to print something in row 10, column 25, than writing `PRINT CHR$(27)+"Y"+CHR$(10+32)+CHR$(25+32)`, for example.

There are a number of other functions you couldn't write for yourself. For example, you can draw lines, individual pixels, and empty or full rectangles, or fill areas of the screen with green; you have a 'search' feature which will look through a BASIC program and report all occurrences of the searched-for string, very useful in debugging listings! There are also routines to set the time on the PCW's internal clock (just `#ts,12,30,00` for half past twelve) and read the time from it (`#t`).

All mod icons

LIGHT2 and LIGHT3 have the really meaty stuff – 2 is used for designing icons and redefining the character sets, 3 for sprites.

The command `#ud` ('user defined graphic') allows you to assign a character of your own design to any of the ASCII codes. First you have to mark out your character on an eight-by-eight grid of dots and work out a code number for each row. (Anyone who saw the 'Handfont' listing in issue 15 of 8000 Plus will be familiar with this). If your series of numbers was 23,55,250, etc, you could assign this new character to ASCII 225, say, by the command



A listing to create the sprite and move it round the screen

`#ud,225,23,5,250`, etc. From now on your new character appears on screen whenever an instruction like PRINT CHR$(225) occurs in a listing, instead of é, the old character for that code. It stays that way until you switch off.

If used in conjunction with the 'stringprint' command (`#st`), very powerful effects are possible. Stringprint prints out any combination of characters to the screen in normal size, double width, or double height and double width. Of course you can use it in combination with reverse video and boxes to give some striking effects – and by putting sections of a graphic into different letters and then printing the letters as a string, you can print out whole pictures and diagrams to the screen.

The corresponding command for the printer is `#gp` (for 'graphics print'), which will similarly send those characters you've just dirtied to the printer in any of the three sizes. The definition is not very good however, because it uses the pattern you designed for the screen character, which looks very coarse on the higher quality printer display. There's no such thing as NLQ print, so it's not really suitable for word processing use. (The PCW prints NLQ by overprinting two different dot patterns – you could arrange to do this yourself, but it's a lot of trouble!)

Lightning allows you to define 'icons', a two-by-two block of characters which you redesign to make a small graphic. A set of commands lets you position this in any row or column on the screen (any number of times), erase it, or move it around. If you want something to move smoothly, not jump from row to row or column to column, or you want a graphic larger than an icon, you'll have to design yourself a special icon called a 'sprite'.

Space and time

Lightning is split into 3 parts because the more complex routines take up a lot of your precious BASIC workspace. Normally you have 31k or space to write your programs in; after running LIGHT1, with all the simple functions, this is reduced by 2½k; LIGHT2 reduces it by 5300 odd bytes, and if you need the full LIGHT3 set of routines it will take over 10k off your 31k workspace.

Most of the routines are so straightforward there's little that can go wrong. The ability to set and read the PCW's internal clock is handy but you can't use the time as a variable – that is, there's no short way of timing actions (perhaps you want to limit the time available for the user's response in a program, for instance) without writing a short routine (demonstrated in the manual).

The soft sell?

If you're writing your own programs with a view to releasing them commercially, you may well want to include some of the sprite-drawing, character-modifying and screen-manipulating facilities of Lightning BASIC. Suppose you've written a Mah-jongg playing program using some of Lightning's routines; obviously, when the user runs it, it'll be necessary for them to have Lightning BASIC too, so you'll have to include this in your own program (something like `MERGE "LIGHT"`).

So, the $64,000 question is, "What's the situation on rights?" CP Software's position is laudably open-minded. They say you can use any parts of Lightning BASIC (or their Pascal/C/machine code version, AYE) in your own programs and all they ask is that you check with them first and give them some credit in your manual.

Real Time Software did just this when they wrote the popular arcade game Starglider – the graphics on this were achieved with the help of AYE's routines. Since it is useless without its manual telling you what all the commands are, CP Software don't seem to worried about piracy.

Sprites and icons

A sprite is a figure you design and move around the screen, just like those space invaders of yesteryear. An icon, in the sense that Lightning BASIC uses it, is similar but is of a constant size, effectively a 2x2 block of characters. Sprites can be any size and be placed anywhere on the screen, icons can only be placed on regular text rows and columns.



Jazz up your screens with shaded backgrounds and different sizes of text

cp software

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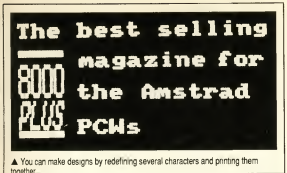
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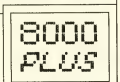
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▲ You can make designs by redefining several characters and printing them together



▲ ...and even print them out

Some of Mallard BASIC's ordinary commands have been modified in Lightning BASIC. The POKE command, for instance, used to set a specific part of the PCW's working memory to a given value, becomes a multiple poke – instead of having to write a FOR loop and poke from a series of DATA statements, you can just do it with a single command POKE 55767,3,45,0,0,0... etc., which puts the given numbers into successive memory locations starting at 55767 or wherever you specify.

Sprite eyes

Sprites can be 'initialised' (created) by a single line in Lightning and be made any size up to six characters wide and 32 pixels (4 characters) high. A set of commands lets you position them anywhere on the screen, erase them, or move them around. You can make their movements very smooth, and make them move as fast as you like.

The disadvantages are that you can only define two sprites at any one time, you can't display them at more than one place on the screen, and they rub out anything they pass through (icons leave their paths undamaged).

A further set of commands lets you save whole screen displays to, or load them from, disc. You can achieve very quick swopping of screens like this, the most obvious example being to create a 'help' screen which users can call up any time, read, and switch back to where they were in the program. There's also the facility to get a full A4 screen dump onto the printer, though the image will be coarser than the usual small size dump.

For those who don't like the standard screen character sets, there are two you can switch over to at any time, an 'italic' set and a '2001' set. For real hackers, there is space to let you define a few new functions of your own and extend Lightning even further.

Finally there are a few useful little BASIC listings demonstrating some of the possibilities supplied on disc – a pie-chart drawing program, a graph-drawing routine, picture-drawing programs, etc. None of these would replace even a simple purpose-built graphics package (the one on Mini Office, for example) but the main use for them would be as examples to study and adapt or rewrite for your own purposes.

Any others?

The only real rival to Lightning BASIC in terms of screen graphics is Nabitchi's EXBASIC toolkit, which sells for the slightly lower price of £11.45. This works in a similar way, by modifying your own Mallard BASIC to add extra commands to it.

Lightning offers a wider range of commands (sprite and icon handling, control of printer graphics too) and its various graphics routines seem to run faster too. EXBASIC does have circle drawing command, for which in Lightning you need to copy a subroutine out of the manual.

Other than this, if you want to put high-resolution graphics into your programs – BASIC or otherwise – you'll have to resort to the CP/M's 'GSX' utilities ('Graphics System Extension'). Most of the files involved in this are already on your systems discs for free (they have exotic names like DDFXHR8.PRL), but they need a lot of modification to work in BASIC or any other application, and there's simply no useful documentation on GSX around to tell you how to do this. The PCW manual hardly mentions GSX. Unless you're a dedicated hacker it'll really be a non-starter.

The verdict

The supplied manual is fine as a reference and the section for LIGHT1 will present no problems even for rank beginners. However, the sections on defining icons, redefining characters and setting up sprites are hardly lucid, and if you haven't done anything like it before you might have a hard time making sense of it all. A couple of worked examples would have made things much clearer (blasé explanations like 'conventionally, sprites are designed on graph paper and mapped to a binary data bit pattern' may mean a lot to hackers, but won't enlighten beginners!). CP Software say there will be a program ICONS on the final release version of the disc which will let you design and save icons much the same as LOCOCHAR lets you redefine LocoScript characters.

Overall Lightning BASIC has a lot to it – there's something of interest and use for everyone from dabblers, to budding games and applications writers. CP's enlightened views on letting you use their routines in your own commercially-released programs makes it especially recommended to anyone thinking of writing and selling their own software. It has its limitations, but as a creative graphics aid for BASIC programmers it is an extremely useful tool, and at the price is very good value.

EXIT

PLUSES

- Simple and easy to use
- Can make even simple BASIC programs look really professional
- Routines for beginners and hackers too
- Can use it in programs to sell
- Great fun to use!

MINUSES

- Documentation on sprites and icons unclear
- Printed output is coarse draft quality
- Only simple graphics (points/lines/rectangles)

RANGE OF FEATURES	■■■■■	PERFORMANCE	■■■■■
EASE OF USE	■■■■■	DOCUMENTATION	■■■■■

***8000 PLUS* VALUE VERDICT** ■■■■■

Lightning's features

Here's a list of the most useful commands Lightning BASIC offers you:

- Beep
- Clear screen
- Turn on condensed print
- Flash screen in reverse video
- Send graphics to printer
- Change screen text font
- Wait for keypress
- Plot a point/line/rectangle
- Fill an area on screen
- Dump screen to printer in A4 size
- Create and position icons/sprites
- Create user-defined screen character
- Confine text to a window
- Yodel (two-tone beep!)
- Set/read the time
- Assign strings to [f1] to [f8] keys
- Echo screen text to printer
- Reverse video or underline text
- Wait for a number of seconds
- Save/load screen to disc
- Save/load memory to disc
- Double length PEEK and POKE
- POKE multiple values

Debugging aids:

- Search program for text string
- List all variables

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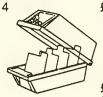
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DATA DAY

Attention Mini Office owners! Confused by the manual? Rob Ainsley makes a start on decoding it for you.

Mini Office is a versatile and easy-to-use program – not to mention remarkably good value at £29.95 for a database, spreadsheet, word processor, graphics and communications setup. However, because the program is so vast the manual seems slim in comparison, positively unhelpful in places. For Mini Office users everywhere, we begin a series on getting to know the package, starting off this month with the Database section.

Where do you begin with a database? Well, as you probably all know a database is an electronic information store, and the secret of success with Mini Office's database is to work out how to arrange your data items so they all fit on the screen.

Mini Office adheres to normal database jargon: one screenful of data, usually displaying one person's details, is called a 'card' or 'record'. Each entry on that card, like name or age, is called a 'field'. A common use for databases is keeping employee and personnel records. As an example, suppose you are the owner of a Sumo wrestling stable; let's go through the processes required to keep track of your wrestlers – address, weight, age, fighting record and so on.

The first thing to do is to sketch out on a piece of paper the general structure of the card. Database programs need to be told how much space to leave for each field, and what type of information (numbers or letters) the field will hold. If you want a field to hold a number, Mini Office will reserve space for 20 digits on the screen, so don't try putting numbers next to each other – keep them on separate lines. When it looks to your satisfaction, you can start putting this structure into Mini Office.

Post-Office structuralism

Put your Mini Office disc in drive A, type `OFFICE`, and select 'Database' from the menu offered. To set up your database, you first define the structure that you designed on paper, through the 'Alter structure' option. On a new database you get the message 'No Structure Defined!', but ignoring this and pressing [ENTER] lets you start defining one. Up comes a list of all the fields you've defined so far, so right now it's blank, and a list of options. Before you do anything else you have to define at least one field, and 'name' seems the best one to start with. Press 'A' to add a field; the figure 001 appears (this is the number Mini Office will refer to the field by) and you are invited to supply a name. 'Name' seems the most sensible. You can refer to this field from now either by its number, [1], or by its name.

Next you're asked to use the cursor to set the type of the field – the choices are 'Alpha' (for 'alphanumeric', meaning names, addresses and other general combinations of letters and numbers), 'Date', 'Number', and 'Formula'. The last is a field whose value is set automatically as the result of a calculation on another field – more of this later. The reason you specify the other three is so that Mini Office knows how to sort them into order – you could just make every field in the database an 'Alpha' field if you wanted, but then you'd find that £2,000 was sorted before £3, and 21/06/88 before 30/05/84.

'Name' should clearly be 'Alpha', so you can just press [EXIT] to accept this and go on to the card display screen. Right now it's blank, and you can place the 'name' field anywhere you like on it – first though you can decide a variety of display formats for the 'Name' field on screen, selected from the style boxes at the bottom of the screen by cursoring into them and pressing [ENTER] to cycle through the options. 'Norm' lets you choose whether the names will be shown in normal or dim characters; 'Normal' offers you normal, italic, outline or 'data 70' typefaces; 'Size' offers four different sizes.

Field work

Now you can mark out the slot on the card where all the names will go. When all the style boxes show the required settings, cursor onto 'Place' and press [ENTER]. You can move the cursor to the point where the name field starts, fixing it with [ENTER], and then use the cursors to stretch it to the size you decided on at the design stage. [EXIT] takes you back to the list of fields.

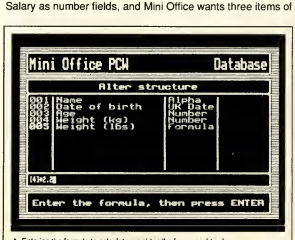
Next thing to do is to put all the general text you want printed on each card – headings, titles explaining what the fields contain and so on. This text has no effect on the database, but is displayed with each card as information for the reader. You want the 'Text' option to do this, so press T and you'll see the card layout again, with the slot for the name field you just defined. You want to add text, so press A for Add. Another list of options appears letting you set text in italics, dim etc. again. When the style is set appropriately, cursor onto 'Text' and press [ENTER]. This lets you type in the text you want at the top of the screen, finishing with [ENTER] again. Then you cursor it into the required spot.

If you want to go back and change anything, you can do so with the 'Modify', 'Del' or 'Clear' functions – Del deletes a single piece of text, Clear deletes the lot.

[EXIT] gets you back to the list of fields, and you can now define the rest of them in turn. Keep doing 'A' for 'add' and placing fields where you want them on the screen, avoiding overlaps.

Your number's up

So, our Sumo manager needs to set up Weight, Age and Salary as number fields, and Mini Office wants three items of



▲ Entering the formula to calculate weight in lbs from weight in kgs

Sumo note

Sumo is the latest sport to shoot to obscurity on Channel 4's Tuesday evening sport spot. Current champion of this ancient Japanese wrestling is 'The Wolf' Chiyonotuji, though newcomers Hokutoumi, Onokuni and Komeniki, the 38 stone Hawaiian, are challenging him for the title.

More space

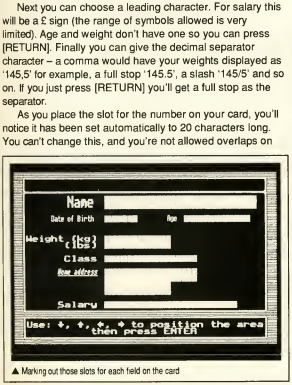
When you've defined your card structure Mini Office tells you at the end of the field list, how many cards the disc has room for. Don't forget you'll get more on an 8512's B drive – the 'Disc Utilities' Menu's 'Selected Drive' option lets you choose the B drive as standard. The smaller your card structure is, the more records you can store.



information for number fields. After you've set a field to 'number' type, it'll ask you for the number of decimal places you want. For Age and Salary this will be zero, which is the normal choice so you can just press [RETURN]. If the weight is to be in kilos, you might well want one decimal place, and the way to change the zero to 1 is first to delete or [CUT] it and then type the 1 (or other figure up to 9).

Next you can choose a leading character. For salary this will be a £ sign (the range of symbols allowed is very limited). Age and weight don't have one so you can press [RETURN]. Finally you can give the decimal separator character – a comma would have your weights displayed as '145,5' for example, a full stop '145.5', a slash '145/5' and so on. If you just press [RETURN] you'll get a full stop as the separator.

As you place the slot for the number on your card, you'll notice it has been set automatically to 20 characters long. You can't change this, and you're not allowed overlaps on your card – hence the care which must be taken at the design stage. If you want to move to an area of the card that isn't on the screen, you can scroll the screen by moving the cursor onto the arrow boxes at the right hand side and [ENTER] to move in the direction of the arrow, but it's best to stick to one screen's area if you can.



▲ Marking out those slots for each field on the card

Formula racing

Suppose you want to display the weight of each wrestler in pounds as well as kilos. You could just set up another number field and type in all the weights again, but as 1 kilo is 2.2lbs you can use Mini Office's calculate facility to work it out automatically for every wrestler. Suppose the field for weight in kilos was field number 4, called 'Weight (kg)'. When setting up the 'Weight (lbs)' field make its type 'Formula'; you are then asked to tell Mini Office how to work out what to put into that field. You want the value of the 'Weight (kg)' field, multiplied by 2.2. You can write this formula as `[4]*2.2` or as `[Weight (kg)]*2.2`, referring to the kg field by number or name.

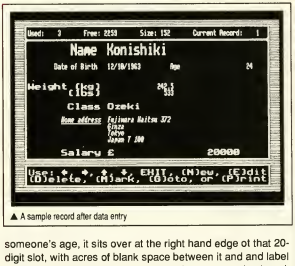
Mini Office is generous with its calculation facilities and you can have pretty complicated formulas. Suppose the salary is decided by the wrestler's weight and age – those over 300lbs get £7,000 a year for every year of their age above 20, and others £5,000. You could make 'salary' a formula field and define it as `IF([Weight (lbs)]>300,([Age]-20)*7000,([Age]-20)*5000)`. The IF command takes the form "IF(a test, value to use if test is true, value to use if test is false)" and can involve only date, number and formula fields.

To avoid complications, keep all your entries to one line – the Address field, for example, must be kept as a collection of separate fields, one to a line. If you don't, you'll find that the returns you put into your multi-line address field make all your fields get out of step and get put in the wrong records.

Ready, setup, go!

With the field setup all done, [EXIT] back to the main menu. Now comes the mind-numbing part which all two-fingered typists dread – entering all that data which up to now has been scribbled in an exercise book. You want the 'Edit data' option from the main menu followed by N for each new record. You just type in the appropriate details into each slot on the card, using cursors as normal, finishing each field with a [RETURN]. The figure for weight in pounds is worked out automatically from the weight in kilos, of course, but doesn't show up until you've finished the whole card and pressed [EXIT] to go on to the next one.

You'll soon realise the worst thing about all those number fields being 20 digits long – when you type in '24' as someone's age, it sits over at the right hand edge ot that 20-digit slot, with acres of blank space between it and and label text you put on the card. There's nothing you can do about it on screen, but don't worry, you can suppress these leading blanks on the printout!



▲ A sample record after data entry

Once the slog of data entry is finished, the fun part begins. Mini Office has some excellent printout facilities to embellish your data with, and some powerful sorting and selecting functions too... but that's all we've got time for this month.

EXIT

● Next month's Mini Office article will finish off the database with retrieving and printing data, and giving a host of tips the manual hides.

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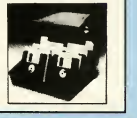
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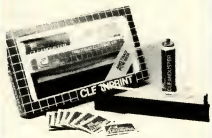
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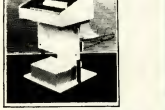
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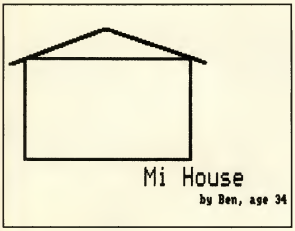
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PAINT YOUR PRINTER

Break your PCW out of the dreary old black-and-white world

It may have escaped your notice, but several suppliers of PCW products are offering coloured printer ribbons for sale – commonly available colours are red, blue, green, brown, orange and purple. Apart from sending out all your correspondence in lurid hues, these ribbons can add spice to your life if you run any graphics programs by allowing you to print out in glorious technicolour.



Tie a yellow ribbon

This article assumes that you've got access to some kind of graphics-producing program. Among the many on the PCW market are MasterPaint (Database Software) and Art (Electric Studio, with light pen), and all the Desktop Publishing programs (Newsdesk, Fleet Street, The Desktop Publisher and Stop Press) are capable of producing detailed designs and graphics too.

Colour separation

Virtually all colour printing in magazines and newspapers is done with a process called 'four colour separation'. If colour photographs need to be put on a page, they first have to be split into magenta, cyan, yellow and black sections. This separation is done by specialist companies called 'colour originators' who have expensive scanning equipment which can block out everything except the cyan in a picture, then everything except the magenta, and then yellow.

Each of the four colour films (black is an honorary colour for these purposes) has very accurate registration marks to allow it to be aligned with the other three, and they are then all printed on top of each other. The individual colours combine again (remember those school experiments where a mixture of blue dots and yellow dots looked like pure green from a distance?) to give an apparently full colour page. If you look at any printed photo with high enough magnification you'll see the constituent dots.

Magenta, cyan and yellow are the primary ink colours, so any other colour can be made up from them. On television sets the primary colours are red, green and blue: this is because printed inks produce colour by reflecting light, TV phosphor dots produce colour by emitting light.

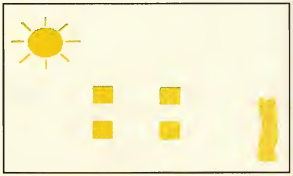
In theory you shouldn't need a special black film – overprinting solid magenta, cyan and yellow should produce black. In practice it is impossible to register the three films accurately enough – if all the text on a page had red, blue and yellow fringes it would be impossible to read – so a simple black film for text is used as well.

Multicolour printing is simply a matter of accuracy and patience. All you need, apart from your software, is a supply of coloured ribbons – one for each colour you want to use.

The first thing to do is, using whatever software you have, to create the picture you want as normal. If you want to do a lot of subtle shading with your graphics program's 'fill' patterns hang on for a minute – leave things just as skeletal outlines for the time being. When you've got it just as you want, you start the process of 'colour separation'.

Print out your basic picture and then work out which bits you want to be in which ribbon colours. What you need to do is to make up a separate file for each ribbon containing just the parts to be printed in that colour, then overprint all the files so they match. The practice is of course the hard part.

Suppose you are going to tackle the red parts first: load your whole design back into your graphics program, and using the 'fill' command fill all the areas to be printed in red with whatever pattern you want – maybe tiling or brickwork patterns, or just a light pattern of dots to give a nice shade. Now erase everything except the parts to go in red. Erase



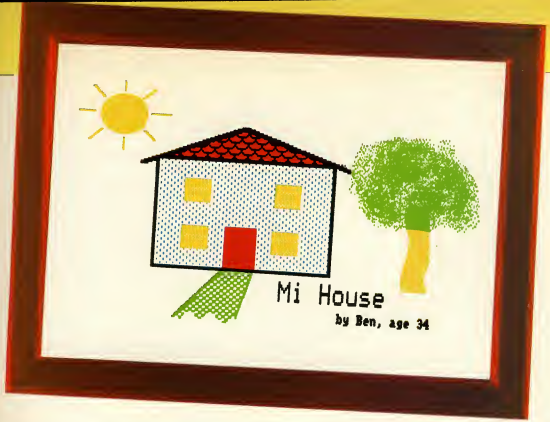
the outlines to the filled areas too if they are going to be printed in black. Save this file under a new name, reload the whole design and erase everything except the blue parts, save that, and repeat for each colour.

Once you've got your different colour files on disc, print them out in turn making sure you've fitted the right ribbon. After each colour, feed the sheet back in to the printer making sure it starts in exactly the same place so that the different colour edges meet properly. The best way to do this is to use perforated paper with the tractor feeder and wind it back after each print run, so there's no way the paper can slip sideways.

You've got to have a reference point on your paper to know how far back to wind it before overprinting. Something like having the top of the sheet always aligned with the tractor unit clips is conveniently memorable.

Hints and tips

One thing you ought to do is go out and buy a copy of the Beano. Apart from being a thoroughly educational read, it'll show you how professional cartoon artists use colour and shading patterns to create certain effects. After all, what you're doing is really drawing a cartoon.

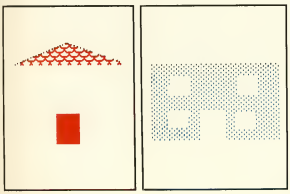


For instance, most outlines are in black. This serves two purposes: it lends weight to the borders of objects, and it also allows you a bit of leeway in the finicky process of positioning the paper right each time through. If you've got two adjacent regions of different colours then any slight error will result either in a white stripe between them or a messy overlap. A black border between them would disguise that.

Areas look better filled with a delicate pattern rather than solidly coloured. Most graphics packages have a range of stipple-effect fills from about 10% density up to solid.

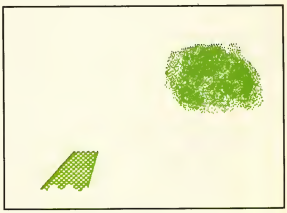
It's usually best to totally separate the colours – stick to pure red, pure blue, pure purple and so on. If you want to ensure a perfect join between a light colour and a dark one (eg. black) you can allow them to overlap since the black will swamp the other.

Once you get experienced at lining everything up you can experiment at printing one colour on top of another. For instance you can try to get a very dark blue by printing a fine pattern of black dots over a blue area. To do this you just fill the area in question with a different pattern on each colour-separated file.



New ribbons often smudge, leaving a trail of faint scan lines as the print head moves over the paper. Either print a few pages of text with each ribbon to get rid of any excess ink or move your printer head back slightly. (The PCW printer has an impact control lever at the extreme right end of the case. To get at it you'll need to flip the front flap of the printer up.)

You'll be able to increase your range of effects by printing in draft and NLQ modes. NLQ doesn't necessarily produce better results, and the print head scan lines can be much more apparent in areas of solid colour. Be careful mixing draft and NLQ printing in the same design – it is possible, but with some software the printer dot spacing changes very slightly resulting in a gradual loss of register along the line.



Practice makes perfect

So saying, the rest is up to you. Remember the basic rules of design – ie. don't go overboard with dozens of colours when a simple two or three colour design would be much more impressive. The examples of the separation and printing process on this page only underline the fact that printing in colours can't make up for basic artistic deficiency. We used Database Software's 'MasterPaint' program to create them, and ribbons supplied by HSV.

Many high street copy shops now offer colour photocopying, although it often has to be sent away to a lab and costs around £1 a sheet. Signs saying 'Colour photocopies – 10p while U wait' probably mean in one colour only!

EXIT

● ***Streamside Research*** *(2 Rosary Drive, Bridgwater, Somerset TA6 7JS) sell a disc for £5 with hints and tips on colour printing, and some ready-separated example files for loading and printing. They do a range of discs with the example files in the correct format for a number of graphics programs.*

Ribbon Suppliers

Coloured ribbons suitable for the PCW 8000 series printers are available from HSV Computer Services (£4.95 each) and also SBS Computer Supplies (£5.57 each) – see their ads for details. HSV also offer coloured 9512 ribbons, although you can't print out much in the way of graphics on a daisywheel printer!

PAST MASTER

A new version of an old favourite word processor – WordStar – is just out for the 9512



WORDSTAR 4

£194.35 ● MicroPro (01-879 1122) ● 9512 only

There's almost no point reviewing WordStar 4. WordStar is WordStar, it's an old industry standard word processor for microcomputers. Like most old standards, it took a stranglehold on the computer industry because it was the first, not because it was the best, and has evolved through many stages in an attempt to become all things to all men.

History lessons aside, is WordStar 4 a good word processor today? For your money (no misprint, that really is £194.35) you get a tried and tested word processor, spelling checker, mail merger and some very impressive packaging. Interestingly, MicroPro have specifically angled WordStar 4 at owners of the new 9512 – it comes on two 9512 discs, and is preinstalled to expect the 9512 printer. 8512 owners could use it, but it will need some jiggling to get the printer working.

What's new?

Users familiar with old versions of WordStar will want to know what the changes are. You get an unerase command, in case you accidentally delete a line; a calculator so you can do a quick sum on-screen and copy the result into your document; a shorthand facility so you can assign regularly used phrases to certain keys; the ability to store files in CP/M's various 'user groups' – handy especially for hard disc owners.

Headers and footers can be more than one line long; proportional spacing works better; there is an indexing command to help you compile indexes and contents lists for long documents; block move commands (copying and pasting in LocoScript jargon) can now work with blocks of unlimited length; and finally WordStar 4 claims to be faster all-round than its predecessors.

If you own an old WordStar for the PCW, you can upgrade to the new version for £102.35, VAT inclusive.

A quiet word

If you're after WordStar's benefits, you'd be better advised to go for NewWord (£69, NewStar, 0277 220573). This has pretty much all WordStar 4 has except on-screen calculator and long headers & footers.

From pack to rack

To run WordStar you really need to copy all its working files to your M drive. WordStar is a big program, and stores some of its code on disc, only reading it into memory when needed. You can do a lot of disc swapping if you don't use the M drive. It isn't obvious how to make up a good working disc, and it's a badly documented process.

Creating and editing documents is where LocoScript users start to gape in terror. Instead of nice friendly menus you enter all your editing commands like bold and italic with a series of 'control sequences'. To set a word in bold, you hold down [ALT], press P (for 'printer control') then B. Most print commands are by obvious letters, except italic which is the letter Y!.

WordStar 4 can read all the PCW's direction keys, such as the cursor keys, [PAGE], [EOL] and so on, but unfortunately the on-screen help prompts don't reflect this, and still tell you to use the old incomprehensible WordStar standards (to move to the end of the document it tells you to use [ALT]+QC, when the [DOC] key works fine.)

Unlike LocoScript (but like Protext) WordStar doesn't reformat paragraphs as it goes. If you insert text the right hand margin will go awry and you need to explicitly reformat the paragraph with the [RELAY] key.

Printing is another bugbear. All printer control is by 'dot commands', which are stored lines of text. To change to 12 pitch text you have to type on a line by itself `.cw10`, and 10 pitch is `.cw12` (and yes, those are the right way round). Strangely, even though our review version had most definitely been set up for the 9512 printer, WordStar would not print £ signs. One bonus over Loco and Protext is a 'pause printing' control code, to allow you to change daisywheels.

Moving from the top to bottom of a document, cutting and pasting large blocks of text and inserting other files into the current one (all slow in LocoScript) are fairly fast operations. Doing a global find-and-exchange on a word is still slow compared to Protext.

No laughing matter

All in all, once you've got used to its idiosyncracies WordStar 4 is an efficient text preparer. Its spell checker and mail merger are powerful, and the extra features like the calculator make life pleasant. There's just one problem – the price. If WordStar cost £30 or £40 it would be a serious rival to Protext; at almost £200 it's a joke. If you run a company where all your secretaries are WordStar-trained then it's probably worth the money to avoid retraining hassle, but otherwise LocoScript and/or Protext are streets ahead both in performance and value for money. EXIT

PLUSES
- Conforms to the old WordStar standards
- Includes spell checker/mail merger/calculator
- Does its job well once you are used to it

MINUSES
- Large and unwieldy to get going
- Can't print £ signs on 9512 printer
- Protext is faster, LocoScript prints better
- Silly price

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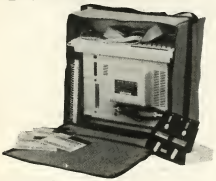
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LocoScript's tabs make effective presentation of data and figures easy

One of Loco's great strengths is its ability to handle complex layouts. You can mix and match any combination of justified and non-justified text in different sizes and styles with involved tab and line setups and the results will be perfect every time.

Well set out tables look very impressive in the middle of a business report or club newsletter, and they're very easy to achieve in LocoScript using the tab options you have available.

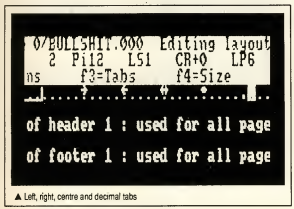
Crisp prose

Suppose you want to include last year's sales of your exotic flavour crisps in England in a report. It needs to show the number of packets sold in each region of the country for each flavour.

The first thing to do is to sketch out the sales table on paper, and to note things like the number of letters in the longest flavour and the number of digits in each sales figure. Say the longest flavour is 'Raw Octopus and Garlic' – with a space after it, you'll obviously need 23 spaces allocated under the 'Flavours' heading. The sales figures for each region and each flavour will be in millions, with each number being up to three digits long, of which one will be in front of the decimal point. You want a space before and after, which makes six or so spaces to be left for each figure.

There are four regions for sales purposes, which with the column for a total means five columns of six spaces, ie. 30 spaces. With the 23 or so for flavours, the table will be 53 spaces wide in all.

So, off you go typing in the text of the report until you want to insert the table. On the first line of the table, you want to change the layout currently being used to a new one for the table. Press [f2] and select 'new layout'. The cursor



▲ Left, right, centre and decimal tabs

now jumps up into the 'ruler line' at the very top of the page, and you can set your margins and tabs here.

Now, the normal margins on an A4 document in 12 pitch are at 10 and 85, ie 75 apart, while your table is 53 columns wide. You therefore want a new left-hand margin (75-53)/2 columns on from the old margin, ie. at 10+11=21.

Move the cursor along until it rests over column 21 and then set the new left margin by pressing [f1] then [ENTER]. Pressing the space bar takes you immediately to the right-hand margin, and from there you can move back over to column 85-11=74 and set the new right hand margin, again with [f1].

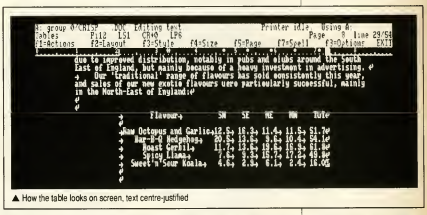
Picking up the tabs

Now for the tabs. In LocoScript you have not one but, gasp, *four* types of tab. The 'normal' one is called a 'simple' tab or left tab, symbolised in the ruler line by a right-facing arrow. There'll probably be some of these hanging around already, and the easiest way to get rid of them all in one go is to use the 'clear tabs' option from the 'f3=Tabs' menu. You can also erase individual tabs by putting the cursor over them and hitting the [-] key to delete them.

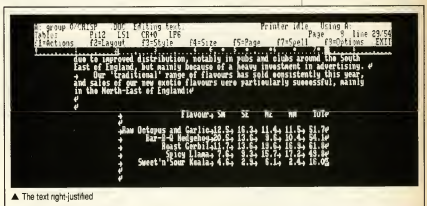
To place a new tab into your ruler line, cursor to the right position and either press [f3] and choose the 'set simple tab' option, or just hit the [+] one. (You can set any of the following tabs from [f3], the Tabs menu, but the easiest way is to press the [+] key the right number of times.)

If you press [+] twice, the right arrow changes to a left-facing arrow, and you've set yourself a right-tab in that position. When you press [TAB] in a document before a right-tab, the following text will have its rightmost edge aligned against the position of the tab. A convenient use for right-tabs is in your own address on the 'letterhead' at the top of your letters. Inserting a right tab in your text effectively takes up one space, so to fit in your 23 letter flavour, you must have at least 24 spaces free up to the position of the right tab marker in the ruler line.

Press [+] three times and you set a centre tab, symbolised by a double arrow. Text typed after a tab to a centre-tab will be centred around the position of the tab. This can be put to good use when you have a long line of items to



▲ How the table looks on screen, text centre-justified



▲ The text right-justified

LocoScript 1 note

Layouts are one of the major change areas between LocoScript 1 and LocoScript 2, and most of the commands described here only work for Loco 2. In Loco 1, if you edited Layout 3 (for example), all uses of that layout everywhere in the document would change too. This can cause massive confusion!

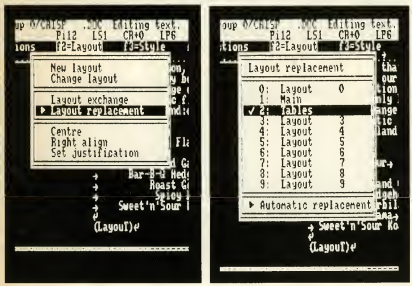
be centred – a programme of events, for example. Rather than putting (+CE) at the beginning of each line, by putting one centre tab in the middle, tab each line into place instead.

Four [+]es give you a 'decimal tab.' This is to enable you to automatically align amounts of money by their decimal points. When entering those sales figures into the table, just press [TAB], then the figure, and all the decimal points in the numbers will be lines up under the tab column.

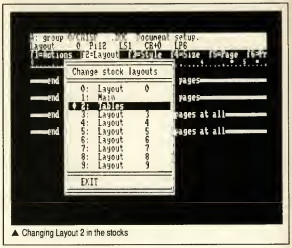
While editing a layout, pressing [-] over any tab will clear it, and a [+] will change any one type to the next type in the list. When you're happy with the line up of tabs and margins, just [EXIT] back to the document and the new ruler line will be in operation. You can go back and adjust it via [f2] again, 'change layout'. Your figures can now be entered, each figure preceded by a press of [TAB] of course.

In the stocks

So, back to typing in the crisps sales figures. For the 'flavours' column on the left, you have three possibilities: right, left, or centre tabbing (there are no digits so the decimal tab isn't appropriate). For right justification within the column, put a right tab at least the width of the longest text entry (ie. 23 columns) from the left margin and precede each entry with a [TAB], for centre put a centre tab at half the width of the longest entry (ie. 12) from the left and precede each entry with a TAB, and for left do nothing (this column is on the left margin anyway).



▲ Replacing the old version of Stock Layout 2 by the new one throughout the document



▲ Changing Layout 2 in the stocks

You can change your mind about the kind of tab you want even after the data has been typed in. If you change the layout to move the tabs, when you return to the document the text will fit around the new layout.

Once you've chosen which types of tab you want in which columns to fit your data, you just type the whole lot in. With the table done, you want to go back to the old layout and carry on typing the body text of the document. You could just hit [f2] again and redefine a new layout, identical to the one used before the table; however, there is a neater way of doing all this.

By defining all the layouts you'll want to use in a document as 'stock layouts', you can call them up any time just by entering [+]LT and the number of the layout. We covered layouts to some extent in an article in issue 16, but to recap briefly you need to get into Document Setup mode, which is a choice from the [f1] menu, while editing. Press [f2] for Layouts, and take the option 'stock layouts'. You can give each one a name like 'tables', 'footnotes' and so on to jog your memory, using the [f7] menu.

Unless you tell LocoScript otherwise, stock Layout 0 is the one used for Header and Footer text, and Layout number 1 for normal body text. So,in LocoScript 2 the equivalent of LocoScript 1's (-LT) meaning 'use the base layout', would be (+LT1). If your tables layout is Layout 2, then, you can select this layout any time in the document by typing (+LT2), and switch back to the text layout by (+LT1).

Keeping your changes consistent

There is a great advantage to having your layouts named systematically like this – that the updating and modification of tables is made easier. Suppose you have 20 tables in a long document, and you want to change the text in the left hand column of each table from being right-justified to being centred; of course you could just go through each table in turn, editing the layout manually, though this would get tedious very quickly.

What you really want to do is to redefine your Layout 2, which is the 'tables' layout, and make sure all the tables are adjusted to take the new version of Layout 2. First go back via Document Setup [f1] again, through Layouts [f2], to your stock layouts, and edit Layout 2 to the new version. This does *not* alter any uses of Layout 2 you have already made, so your tables stay as they were for the time being.

[EXIT] back to document edit, and take the 'Layout replacement' option from the 'f2=Layout' menu. You see a list of your stock layouts, and you can set the ones you want to replace (ie. update to the latest version) using the cursors and the [+] key. Ticks appear by the ones selected for replacement.

All you have to do then is press [ENTER] and Loco does the hard work for you, updating all the Layout 2's between the position of the cursor and the end of the document, and putting all your tables into a consistent layout. EXIT

SuperCalc to LocoScript

Perhaps the figures for the table you want to lay out have come from a spreadsheet. If you own SuperCalc, you're in luck: you can use the spreadsheet figures directly in a LocoScript document without having to type them out again. The trick is to print the figures to disc and then use Loco's find and exchange to strip out all the spaces separating columns and insert tabs instead.

In SuperCalc, first you turn off the borders with /G, B and then use SuperCalc's /O (output) command with the options D for display and ALL for all the range (or whatever range you want). Give D for disc as your destination and choose a filename.

Back in LocoScript, start editing the document the figures are to go in, set up your 'tables' layout and Insert the figures by pressing 'f1=Actions' and choosing 'Insert Text'. You're returned to the disc manager; put the cursor over the tile you saved the SuperCalc figures in and [ENTER] twice. The figures are inserted into the document. All you have to do now is keep cursoring back to the beginning of the figures, repeatedly doing an automatic exchange ([EXCH]) of three spaces for two spaces until all the text and figures are separated by two spaces. Then you [EXCH] two spaces for a tab; so long as none of the entries is too long they should obligingly shuffle into place.

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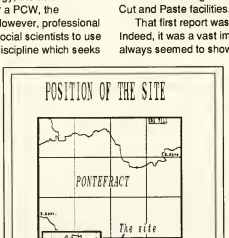
DIGGING INTO HISTORY

Eric Houlder unearths a vital role for his PCW – running the Pontefract archaeology society.

For more years than I care to remember, I have been a committee member of our local archaeological society. At first glance, archaeology, the science of the past, seems a strange bedfellow for a PCW, the representative of modern technology. However, professional archaeologists were amongst the first social scientists to use computers, which are ideal tools for a discipline which seeks to store and organise vast amounts of categorised data. Amateurs are slowly beginning to emulate them. My own baptism came one weekend in winter.

A builder found human remains when making test-borings on a newly purchased site. He gave the archaeologists a weekend in which to excavate and record the remains before his machines moved in. As it was the weekend, the county Archaeology Unit couldn't mobilise its field-team so the local society of amateurs, with me in charge, had to manage on its own. In preparation for this sort of eventuality I had been entering the active members' names and phone numbers onto a database file, but as this was still incomplete I had to resort to the old-fashioned card index. Luckily, human skeletons are a common find in our ancient town and most members have considerable experience in excavating them, so that the problems envisaged were rather more concerned with the likely weather conditions over the weekend than with the actual skeletons.

The digging went very much as planned, the site proving to have been an early medieval burial-ground. When it was all over, I was left with a mass of data to analyse and to organise into a report.



Font of wisdom

At first in my newsletters I made the classic beginner's error of trying to include too many different font-styles in one publication, rendering the results difficult to assimilate. I have now settled down to the use of just one, or at the most two fonts.

Family friend

The family PCW had made its appearance in November 1986 as a joint Christmas present from my wife to our two teenagers and myself. Having previously used nothing more complex than an ageing Olivetti portable typewriter, it took a good few evenings after work to master basic word processing with LocoScript 1 to a point where I felt confident to produce an official report on it. The events of that weekend were to compress my schedule considerably!

Previously, I would have made several drafts by hand before committing myself to the typewriter, but the PCW sitting in the study seemed to offer several short-cuts. I typed the data straight onto the screen, saved it to disc, and then set about organising it into logical sequence using the Cut and Paste facilities.

That first report was well received by the members. Indeed, it was a vast improvement on previous ones which always seemed to show massive encrustations of Tipp-Ex even in reproduction, as well as unjustified right-margins, and other common faults. Looking back, however, I am now embarrassed by its naivety of presentation and the excessive use of italic, bold and underline commands.

Back from the grave

Shortly afterwards, the Society committee asked me to revive the members newsletter which had not appeared for many years. Back in the '60s I had been editor, and still had the painful memories of long evenings spent struggling with a recalcitrant Gestetner. The difference made by the PCW, coupled with modern reprographics, was amazing. A bright, readable master copy was delivered to the print-shop, and a bright, readable newsletter eventually reached the members. There was not an inky finger in sight!

Meanwhile, requests had come in from archaeological journals for reports on recent excavations. Luckily, I had used many of these reports as word-processing 'fodder', and so the information was already on disc. It was a simple matter to paste the right bits into the right places, add new conclusions, and print out a manuscript which looked like the work of a professional typist. One journal editor even complimented me on the excellence of the report, not realising that most of the credit belonged to the PCW.

It was around this time that I developed what my wife called an unhealthy obsession for the PCW. It all stemmed from a series of articles which I had written for a magazine devoted to local history. The editors proposed to publish the series in book form, but as the author I realised that many changes would be necessary before this would be possible. Unfortunately, the series had been written in my pre-PCW phase, and now there seemed little alternative but to re-write it onto a disc. Once I'd made the decision, it made sense to alter the style, tidy-up the whole manuscript, and even add some extra chapters. Again, many long hours passed around midnight, with some weekend time as well, until at last the weighty manuscript was delivered to the publishers.

Graphic details

In the interval between books I had acquired *The Desktop Publisher*. After becoming familiar with its operation, I realised that it offered an ideal method of producing period maps for the book. I could prepare a base-map showing only

Local hero

Everybody is supposed to have at least one book inside them just waiting to be written. Mine was already at the publishers, so why, within a few weeks, was I sitting down before the green screen suddenly writing another?

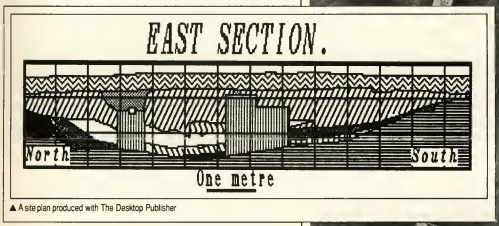
The spur in this case was a book on local history which had appeared some time before. Unfortunately, local history books are nearly always written by local historians. These worthies are too often documentary historians of the old school, who, though well-meaning, do not have the training, the experience, and sometimes even the inclination, to interpret archaeological data. The usual result is a new book based on the same old, tired evidence. Yet during the last 30 years a vast mass of new historical data based on archaeological techniques (many using computer technology) has become available. As a teacher of history, an ex-professional archaeologist, a reasonably competent photographer, and a long-standing member of several archaeological societies, I believed that I knew rather more about local history than most of the local historians. Moreover, I had the photographs of the evidence with which to illustrate my book.

By this time, I felt that I was so familiar with the PCW that I could cut out the handwriting stage completely. I typed the first draft straight in, using the LocoScript template for book chapters provided on the systems disc. Each chapter was kept as a separate document, but the page-numbering adjusted so that they followed on consecutively.

the chief watercourses in the graphics editor, and one of my more talented students agreed to design pictorial symbols for things like Roman forts, henge-monuments and so on. Each of these was cut and saved as a graphic. Later, it was a simple matter to paste the symbols into the correct place, and add text and a key. These maps are so attractive in themselves that they add a different touch to what is in essentials, an ordinary history book. A colleague at work copied them onto overhead transparency material for me. With hand-colouring added the same maps now illustrate my slide-talks to local societies.

Meanwhile, the DTP program was working hard producing the newsletters. After some trial and error I could fashion some excellent graphs again adding a touch of professionalism to what is in fact a very amateur publication.

The society's latest excavation produced another mass of raw data just waiting to be organised. This time I decided to produce the report entirely in DTP. Location maps were drawn, and arranged so that the small map of the British mainland overlapped the larger local map. The cross-sectional drawings so vital to archaeology were carefully re-drawn in the graphics editor, and a key produced using the pattern fill facility. Putting the text into columns proved to be



▲ A site plan produced with The Desktop Publisher

difficult with the complex juxtapostitions involved, and there is no doubt that this particular report took much longer to prepare than any previous one. However, it's more attractive presentation more than compensates for the extra time spent.

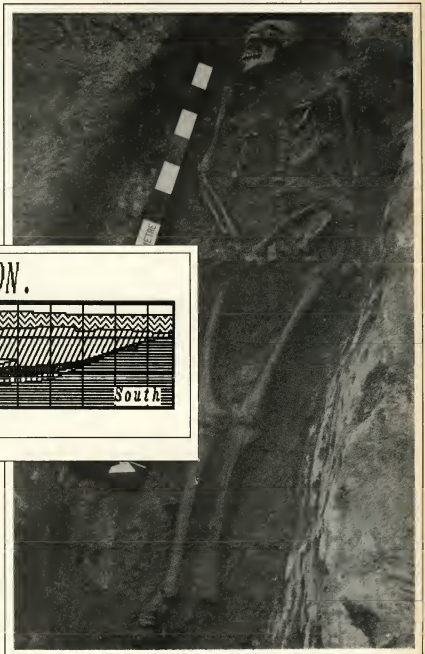
Art for art's sake

Having used The Desktop Publisher for several months now for simple newsletters, parish items, and more complex reports, it is becoming evident that the clip-art selection supplied is not really adequate. The pictures seem to be aimed at pony clubs and estate agents! I am sure that most people in my position, and there are an awful lot of amateur archaeologists and historians organised into societies all over Britain, would appreciate an inexpensive selection of extra art. There is surely a market here for the graphics student trying to earn a little on the side.

What of the future? Staying with DTP, the next purchase will probably be a *MasterScan*. With this it will be possible to store grave record cards on disc without laboriously drawing and shading each one separately. Section-drawings and plans will also be saved in the same way, to be called up and included at the right point in each document. Already, professional archaeologists make much use of computers to organise and represent their data; the amateur must be prepared to do the same.

Even further ahead, it will some day be the norm to enter the vital sections, plans, context records, grave records, etc. straight onto a portable machine in the field. Some professionals already do this; it is only a matter of time before the amateurs emulate them. I would like to be there, and involved when that time comes. Meanwhile, the humble PCW is playing its part in the uncovering of the past; using today's technology to record yesterday's story.

EXIT



▲ A typical member of the Pontefract archaeological society?

Cases in Point wanted!

8000 Plus has been publishing 'Case in Point' for over a year now, and we're constantly amazed by the range of skills our readers have. If you've got an interesting application to relate – maybe you've found some particular software invaluable, or you use your PCW for an interesting organisation – we'd very much like to hear from you.

For instance, there must be hundreds of club secretaries reading this who have struggled to computerise membership lists. Why not write about the pros and cons of various databases you have tried? Do you work in an office where PCWs are used? Charity work? Journalism? The list is endless.

Articles should be around 2,000 words, preferably with an illustration or photo of some kind. Write to *Case in Point, 8000 Plus, 4 Queen Street, Bath BA1 1EJ.* If you don't feel able to write it yourself, send us an outline and if it sounds promising we'll get in touch. Our usual generous payment rates apply!

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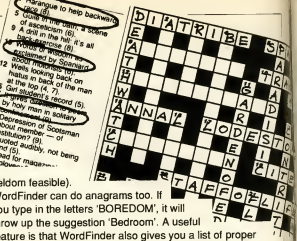
Help for crossword fans, and an easy-to-use database reviewed

WORDFINDER

£12.50 ● Bradway Software (33 Donalan Ave, Sheffield, S. Yorks S17 4PG) ● All PCWs

If you're the sort of person who thinks that a cryptic crossword is an ideal way to while away a few carefree moments, you might wonder why anyone would want to buy a program like WordFinder that works out anagrams for you in seconds. On the other hand if you are one of those terribly competitive types who can't sleep at night because you haven't finished the Sunday Times Mephisto, WordFinder might just save your sanity.

There are two sections. Wordsearch is for those times when you have a clue like "What PCW owners are?" and you have the letters --e-si-i-. You just type the letters you've got with spaces or '-' where a letter is missing and the program compares it against the 19,000 words and 5,000 names it has on disc. In a relatively short time it informs you that the only words it has suitable are 'feasible' and 'sensible' making it the work of moments to decide that the answer is of course 'sensible' (PCW owners are seldom feasible).



WordFinder can do anagrams too. If you type in the letters 'BOREDOM', it will throw up the suggestion 'Bedroom'. A useful feature is that WordFinder also gives you a list of proper names (places and people) which you are inclined to forget about when looking through dictionaries.

Even with the number of words that are available there are many that are missed out. Some very common words aren't there (it's a waste of disc space storing 'the'), and there's obviously a limit to the range of obscure words and proper names it knows. Also there are very few plurals stored so you have to bear that in mind when searching for a word to end in 's'. There aren't many derivatives, so it has 'bore' but not 'boring' or 'bores'.

However you can still find these words using the 'Repeat' feature. This just deletes the final letter from the target and looks for words one letter shorter. You can keep on doing this, reducing a letter at a time, until you come up with a word and you can then see if the remaining letters will make up one of the derivatives. It is still probably more fun to work them out yourself though.

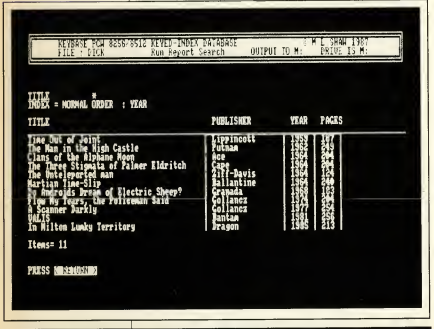
RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
EASE OF USE ■■■■■ DOCUMENTATION ■■■■■

8000 PLUS VALUE VERDICT ■■■■■

KEYBASE

£19.95 ● Unicorn Software (46 West Terrace, Hucknall, Notts NG15 7GD) ● All PCWs

Almost every post brings a new database package in to 8000 Plus, most of them written in Mallard BASIC in the evenings as a hobby. Keybase is one of these with a difference – it's well designed, simple to use and it works.



There's not too much fiddling around setting up formats. When you create a new database you are asked how many different items you want to store per record and how long each item will be, and after that all the screen layouts are done for you. You can have up to 19 fields per record, of up to 50 characters each.

Keybase automatically distinguishes between numbers and ordinary text for sorting purposes. Up to 8 of its 19 fields can be used as indexes, ie. to control the order in which the data is presented, so if you were cataloguing a book collection you could print a list out by title, then one by author, then one by value, all in a few key presses. There's a special command for exporting data to SuperCalc, which could be handy for some users.

When it comes to selecting which records you want and printing them, Keybase is very flexible. You can set up a condition on every field of a record like 'choose all records where this field is less than 23'. On printing out, you can set the printer to 17 pitch or 10 pitch, italic or ordinary text. Each record's details come out on a single line, but you can choose which fields are shown and in what order. Alternatively you can have every field on a new line, which is useful for printing address labels.

Keybase does have its drawbacks. Fields can only be 50 characters long, which restricts its ability to hold much in the way of notes. Since records are printed out all on one line you can't print much detail. The manual, despite being a generous 50 pages long, does make heavy weather of some of the simpler operations by adding technical asides which are really programmer's details.

Overall though, a good value database. It's particularly well suited for cataloguing collections, unless you need to store and print large amounts of textual notes with each record.

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Of course you can also use your MicroLink modem and software to access thousands of other services all over the world, from Britain's Prestel/Micronet to giant databases in the USA. Plus innumerable privately-operated bulletin boards covering a vast range of subjects.

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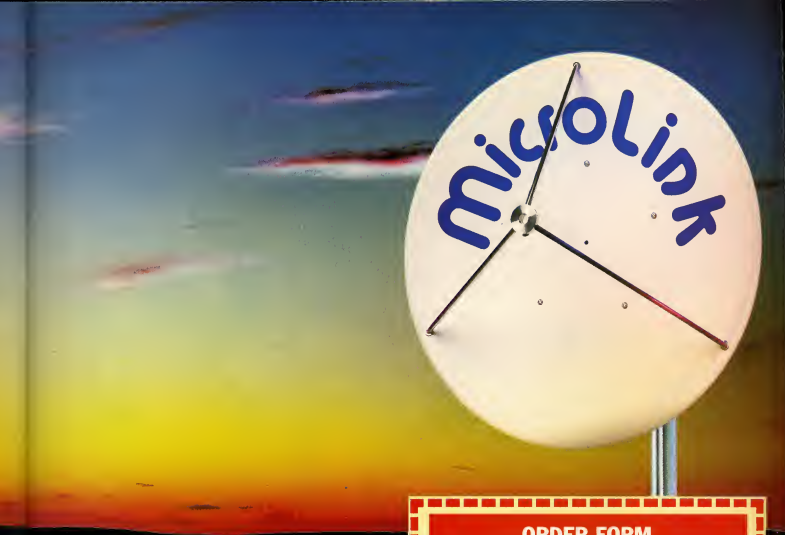
MicroLink dual-speed modem: This stylish modem works at two speeds – 1200/75 and 300/300. Fully BABT approved, it satisfies most users' requirements for a modest price.

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OPEN SESAME

Adrian Wilkins explains how your PCW can open up the world of on-line information services.



It has taken 5 million years, give or take a few, for homo sapiens to evolve to his present advanced state. Central to this has been the ability to communicate with one other, and the development of language from the primitive squeaks, clicks and grunts of other primates is one major aspect that distinguishes man from 'lower' forms of life.

Computers haven't been around for quite as long as man has, and it is no surprise that computers find it hard to talk to each other. But talk they do, albeit electronically, and at quite astonishing speeds in many cases. But what use is computer communications? What can a PCW owner actually do with an Amstrad and a telephone line?

Here are a few examples of the kind of problems that you could solve with a PCW and communications (or 'comms') setup:

• You want access to instant information, be it stock-market prices, air-line travel data, business sales statistics, or whatever. You particularly want to copy details from the database onto your PCW for further analysis or word-processing;

• You have the occasional requirement to send a telex, but cannot afford either the one-off cost of the machine (minimum £1700) or the annual rental (£404);

• You want to contact other home computer users, exchange notes (even software), have problems solved, see if there's any second-hand equipment for sale, etc;

• You may be a self-employed author, living and working from your haven in the Lake District, and need to send in copy to your publishers. Do you entrust it to the vagaries of the Post Office, or do you "post" it through electronic mail?

• You work in a large office, your boss has equipped you with a PCW for word-processing, but you also need access to the company's main-frame computer. Can you turn your PCW into a computer terminal?

The world is your oyster

Well it happens that you can do all of these things. The secret lies in the telephone network: every business and home in the country has a phone somewhere around, and it is possible to transmit computer information down phone lines. From your PCW you can send or receive data from anywhere in the world with a phone.

First of all you need a few extra bits and pieces, the wherewithal to connect your PCW into a standard BT wall phone socket. Your shopping list should look like this:

• A PCW serial interface unit – cost around £60. This plugs on the expansion port at the rear of the PCW and provides a standard 'RS232' socket. In plain language, it allows your PCW to send and receive data in the standard way that every other manufacturer uses. Amstrad's own serial interface box is called the CPS8256, and most Amstrad dealers should sell it.

• A 'modem' – from £100 upwards. This is a box which at one end plugs into your PCW's serial interface socket, and at the other end plugs into the phone socket. It converts data into a form suitable for sending down the phone line. Your phone plugs into the back of the modem, so you can still use that normally!

• A communications software package – from nothing to £100. This is a program you buy for your PCW which allows you to control all your external hardware. Specifically it provides the instructions the PCW needs to send (or receive) data from disc files to the modem, and hence into the comms network.

• Membership of the electronic information service in which you have an interest – see later on.

But what can you *do*?

So why should you want to spend a lot of money on extra hardware for your PCW? What can you actually do with it?

Freebies!

If you don't want to pay any money at all for your comms software, read this month's Public Domain software page, where the MEX program is described. The best way to get PD software is using a modem to download it from a Bulletin Board – chickens and eggs!



'Electronic mail' is the simplest and most straightforward application. As its name suggests, you can send and receive letters electronically, down the phone line. The advantages over a conventional phone call are that the person you are calling doesn't have to be on the phone at the same time as you, and that you've got a permanent record of the message in the shape of a text file for you to refer back to. Because text messages you send can be of any length, you can send carefully worded complex documents that a phone call could never cover. In all, it gives you the speed of the phone and the clarity of conventional letters.

Journalists tend to be quite keen on the benefits of comms. Since all writers miss the deadlines they have to write to, an instant-transmission facility is very appealing. It saves waiting an extra day for the Post Office to do its stuff, which gives you more time to write in.

With the advent of portable computers – particularly the Amstrad PPC with its built-in modem – it is now possible for a company's sales reps to file reports and transmit orders at the end of each day by electronic mail. This can provide the rapid kind of response that can really impress clients.

The Gold touch

The most popular electronic mail (or 'E-mail' for short) service is Telecom Gold, run by British Telecom. This is becoming the standard E-mail network, and virtually every business or service which has an electronic communications capability is on Telecom Gold.

When you subscribe to the service you are given a 'mailbox', which is like a membership number: for example 8000 Plus's number is 84:TXT152. When you dial up, you quote your mailbox number and a password chosen by you. You can then send a message of any length, from a few words to a book, to any other registered Gold user just by quoting their mailbox number. Next time they dial up Gold, they will be told there is a message from you waiting.

In addition, Gold offers a range of other services. You can send a Telex to anywhere in the world – the recipient merely has to be a Telex user. There are also Telecom Gold commands to link you to various other (chargeable) information services.

For example, there's a list of company records which you can inspect; international airline timetables; stocks and shares news; electronic interflora service (!); typesetting and text translation; scientific paper abstracts; news, weather and ticket reservation services.

All these information services come to you with the power of computerised indexing. You can call up the news service and ask to see all mentions of 'Whooping cough' in the last week, and you can record your question-and-answer session in a text file to peruse later on your PCW when you aren't paying phone bills for the privilege of seeing it!

At the Prestel of a button

The other main communications network in the country is Prestel. As for Telecom Gold, when you register for Prestel you get a mailbox number which you can use to send and receive messages. However, whereas Gold is a simple text service (you just transmit streams of text) Prestel is a 'Viewdata' service. It works a bit like TV's Ceefax and Oracle, presenting information a page at a time in a kind of block-graphics way.

Because data is handled in screenfuls of chunky text (called 'frames') you can't get much actual information onto a screen and there are very few in depth information databases to get to. There are some services: train times, share prices, ticket reservations and weather for example. (In fact, if you've ever been to Kings Cross station, they've got a do-it-yourself train times enquiry system which is effectively a direct link into the BR Prestel service.)

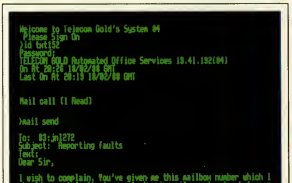
Because Prestel sends text over in pretty frames

Bulletin boards

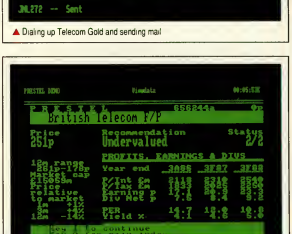
Bulletin boards ('BBs' to the cognoscenti) are essentially clubs, to which you pay an annual subscription (some are free) and then correspond with your new buddies via your PCW. Some user groups and software libraries either run their own BBs or are affiliated to others. Definitely in the hobby bracket, but this is not to say BBs are not useful – the notices sections often offer a wealth of tips to glean, and free software to copy.

Getting to know what phone numbers different BBs are on, and which are the more interesting and lively ones, is word-of-mouth process. Try a local computer club and see if there are any comms fans there.

BBs are run by small organisations, occasionally even individuals, and restricted budgets mean a limited number of incoming telephone lines. It is often virtually impossible to get access except in the wee small hours, but once in you are quickly hooked so keep an eye on the clock or you are in for a hefty phone bill. Definitely a case of "Bulletin Boards can damage your wealth".



▲ Dialing up Telecom Gold and sending mail



▲ A page of share info from Prestel

You what?

Even by the standards of computing in general, the world of comms is jargon-ridden. 'Modem' is short for 'Modulator-Demodulator'; the other common buzzword 'baud rate' for speed of the transmission comes from the name of its inventor, Monsieur Baudot.



Baudy talk

To make your modem and comms software link up to any external service like Telecom Gold or Prestel, you'll need to understand a bit of jargon. Most important is the 'Baud rate': this is the speed at which you transmit and receive characters. Common speeds are 75, 300 and 1200 baud, corresponding to 7.5, 30 and 120 characters per second. You need to set your modem's baud rates to match the system you are connecting to, or they won't understand each other.

Telecom Gold works at two speeds: (i) receive and transmit at 300 baud (sometimes called V21), (ii) receive at 1200 baud, transmit at 75 (sometimes called V23). You can choose which you want to use when you dial them up. If you are preparing for a session when you want to *send* lots of data, choose (i). To *receive* lots of data, choose (ii) – faster transmission in the direction you want means lower phone bills. Prestel always works at 1200/75 baud.

Most comms software programs come preset with the right speeds for Telecom Gold and Prestel – you just pick the name of the service you want off a menu.

interlaced with graphics, it is almost impossible to transfer the information from a frame into a text file for later editing and inclusion in documents. This makes Prestel's on-line systems bad for information searches.

Prestel is more fun and friendlier for hobby users than Gold – you can call 'help screens' when you get stuck – but overall Gold is more seriously useful.

Micronet modem

Micronet giving away a free modem with a subscription sounds too good to be true. What's the catch? Well, it's obviously a basic model (the Prism 2000) and can only work at the 1200/75 speed demanded by Prestel (see the 'Baudy talk' box). Telecom Gold can use this speed, but it isn't ideal. Sending long files is very slow indeed.

How do you join up?

You can join Telecom Gold or Prestel directly, but there are a couple of alternative ways which will save you money:

Microlink is a Telecom Gold subcontractor service which offers you cheaper registration. As well as all the standard Gold services, it has a club atmosphere in that there is a message board for other Microlink users to put questions and notices on. There's also a store of BASIC listings you can copy (or 'download' in the jargon), but not many will be for the PCW.

Micronet is a Prestel service. It's a Prestel-based system, again run rather like a computer club, with pages of news and heaps of software to download (but very little for the PCW). There is also a 'Bizznet' menu for smaller businesses. Micronet also offers access to Telecom Gold's facilities, and at the moment is offering a free modem to new subscribers!

Each service has a tortuous charging system. You'll be asked to pay a registration charge, a standing charge per month, and a usage charge per minute. Some systems have high registration and low use charges, others the reverse. Work out which will suit your use pattern the best.

Telecom Gold (0800 200 7000)
Registration: £40 (includes Telex facility)
Standing charge: £5 per month
Connection charge per min: Peak rate: 6.5p, Cheap rate: 2p
Other charges: Charge per 512 characters sent of 4p (peak rate) or 1p (cheap rate). Various charges for different on-line information services.

Microlink (Telecom Gold service) (0625 878888)
Registration: £5 (£10 extra for Telex facility)
Standing charge: £3 per month
Connection charge per min: Peak rate: 11p, Cheap rate: 3.5p
Other charges: No character charge like Gold. Gold's various on-line information available at same rates.

Prestel (01-822 1122)
Registration: Free
Standing charge: £6.50 per month
Connection charge per min: Peak rate: 6p, Cheap rate: free
Other charges: Special pages (share price etc) extra

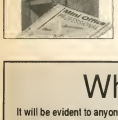
Micronet (Prestel service) (01-837 7872)
Registration: £66 (includes free modem)
Standing charge: First year free, then £16.50 per quarter
Connection charge per min: Peak rate: 6p, Cheap rate: free
Other charges: Special pages on Prestel and Gold at extra rates.

SOFTWARE

Communications software is important. You'll need to make sure that the program you choose has the facilities to send and receive files to the service you intend to connect up to. For Prestel use you'll need the ability to handle 'Viewdata' communications (all the packages mentioned below do this).

Every PCW owner already possesses a communications package. It is called MAIL232 and is to be found on the LocoScript disc on 8000 series machines, the CP/M disc on the 9512. This is a fairly basic package and contains no Viewdata, but it is just about OK if you are simply connecting your PCW to act as a terminal to a simple text mail service like Telecom Gold.

In practice you'll find the friendly environment provided by commercial communications packages well worth the money. Streets ahead in the value-for-money stakes is Mini Office Professional.



MINI OFFICE PROFESSIONAL

£29.95 ● Database Software (0625 878888)

This is the integrated package of word-processing, database, spreadsheet, graphics and comms recently reviewed in 8000 Plus (issue 16). The comms part of the package, it must be said, is a little less elaborate than the two specialist ones below, but can do E-mail and Viewdata, store numbers and do Xmodem file transfers. It is entirely adequate for most purposes, and you get a free database and spreadsheet! Only the manual is disappointing, with a meagre five pages dedicated to comms.

***8000 PLUS* VALUE VERDICT ■■■■■**

CHIT-CHAT COMBO

£100.05 ● Sagesoft (091-284 7077)

Easy to use, and comes with a preset phone directory containing many useful numbers. As well as a little text editor for message preparation, one particularly good feature is the ability to create a "task" which can be set to run at a specified time. It will dial for you, perform whatever is required, and sign off again completely unattended. At last you can reduce those phone bills by taking advantage of night-time rates.

What's that noise?

It will be evident to anyone who has already dabbled in communications along telephone lines that there is a lower form of life called British Telecom, whose equipment has *not* yet evolved beyond the squeaks, clicks and grunts of the aforementioned primaeval ancestors. The quality of a connecting phone line is important in data communications – if you are sending a file of 10,000 words then a crossed line or spurious click can wreak havoc. You soon be familiar with effects such as `The quick bchji=m fox jups over the lKety dog A A.`

This is where communications protocols come into demand. The two common ways of sending long files are known as 'Xmodem' and 'Kermit', and they operate by breaking the file up into manageable sections of 128 bytes, sending each section to the remote computer along with an internal check digit. The receiving computer checks the data against the checksum and reports back OK or not OK. The transmitting end either repeats the previous message or gets on with the next as appropriate. In this way, provided the line noise is not absolutely dreadful, you can guarantee the file will be sent (or received) perfectly. It happens that Telecom Gold supports Xmodem, so this article should arrive at 8000-Plus un-gobbledegooked.

Maybe in the future BT will improve the quality of their service to match the high standards found elsewhere in Europe and the USA. Perhaps another five million years....

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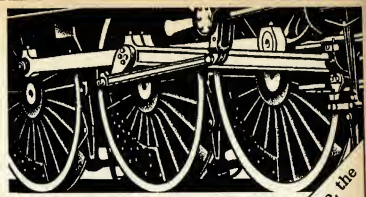
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The main problem with Chit-Chat is that the highest speed supported is 1200 baud, which gives problems with faster modems. Also it doesn't have Xmodem file transfer facility for error-free transmission of long files. Its screen handling in Viewdata mode is painfully slow.

8000 PLUS VALUE VERDICT ■■■■■

DIALUP

£89.95 ● PMS Communications Ltd (021-643 7688)

Has all the standard features and some attractive extras, including Kermit and Xmodem for reliable long file transfers. The user guide provides more instructions than most on how to plug all the hardware components together, but there are some pitfalls – in particular the function keys 1 to 8 are not the [f1] to [f8] on the PCW keyboard as expected, but the [EXIT] key followed by the numeric key 1 to 8. But despite this, the program is easy to use and fairly resilient.

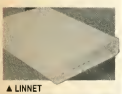
8000 PLUS VALUE VERDICT ■■■■■



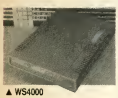
▲ DEMON II



▲ NIGHTINGALE



▲ LINNET



▲ WS4000



▲ ASTRACOM 1000D

MODEMS

The following modems are all suitable for PCW users. They all have British Telecom approval, without which it is illegal to connect to any British Telecom phone circuit. All prices include VAT.

What should you look for in a modem? All modems do the job of sending and receiving data so you can get by with the lower priced ones. The more expensive modems offer two principal advantages: first, they can transmit data at higher speeds than cheaper ones, although Telecom Gold and Prestel can't use those higher speeds.

Second, the more advanced modems incorporate micro-processors which provide features such as automatic dialling and speed selection. Some modems will also answer the phone automatically, which is useful if you might leave your computer running to receive messages while you are out. If you are buying an advanced modem, make sure it is 'Hayes-compatible' – this is a standard that means any communications software you buy can access all the modem's features (like telling it what number to dial).

It appears that every modem has a different type of data cable connector, so when buying remember to ask the supplier for the cable to connect to your PCW. Cables usually cost between £5 and £10.

DEMON II

£91.94 ● Dataphone (0733 230240)

A low cost modem with plenty of good features: autodialling and autoanswering, but no through-connector for your own phone. A superior model, the Designer selling at £114.94, rectifies this omission.) Needs Dataphone's own Kiwichat comms software to work.

8000 PLUS VALUE VERDICT ■■■■■

NIGHTINGALE

£98.90 ● Pace Micro Technology (0274 488211)

Another simple low-cost modem with the common speed rates. No autodialling, but a phone connection on the rear for you to dial manually. Works with all software.

8000 PLUS VALUE VERDICT ■■■■■

LINNET

£163.30 ● Pace Micro Technology (0274 488211)

A high quality advanced modem with micro-processor control, auto speed sensing, and memory for 32 preselected telephone numbers. Hayes compatible.

8000 PLUS VALUE VERDICT ■■■■■

WS4000

£195.44 ● Miracle Technology (0473 216141)

A fully intelligent Hayes modem with a similar specification to the Linnet above. The WS4000 has an inbuilt serial interface suitable for the PCW, so you can just plug it directly on to the expansion slot saving your £60 for Amstrad's adaptor.

8000 PLUS VALUE VERDICT ■■■■■

ASTRACOM 1000D

£166.75 ● Astracom (0792 473697)

A compact modem similar to the Linnet and WS4000. The Astracom also includes a printer port for attaching a printer independent of the computer (but not a PCW printer). The modem may be set up to autoanswer and dump to the printer, thus acting as a data-logger or incoming message printer.

8000 PLUS VALUE VERDICT ■■■■■

Recommended kits

If you are a beginner and you're fairly sure that all you want to do is send electronic mail and read a few databases, then go for kit 1 or 2. Kit 1 can only do 1200/75 speed communications, so is unsuitable for *sending* long documents over Telecom Gold; otherwise it's fine for receiving Gold text and using Prestel. If you want a few extra frills – software controlled dialling etc. – go for kit 3.

As we go to press, Microlink (not to be confused with Micronet) have announced two good value all-in kits – see the news pages for the latest details.

KIT 1 – BEGINNER'S (1)
PCW serial interface: c. £60
Mini Office Professional software: £29.95
Micronet subscription: £60.00 (includes modem)
Total: £150

KIT 2 – BEGINNER'S (2)
PCW serial interface: c. £60
Pace Nightingale Modem: £98.90
Mini Office Professional software: £29.95
Microlink subscription: £5.00
Total: £190

KIT 3 – ROOM TO EXPAND
Micronet (01-837 7872) offer the 'Pro-Pak', an excellent value kit for the more ambitious user. It consists of a PCW serial interface, rebadged Pace Linnet modem, PMS Dialup, connecting cables and Micronet subscription.
***Total:* £218.95**

Take the plunge?

In the final analysis, will the world of comms genuinely benefit you? If you run a business or club and your clients/ suppliers/ employees/ members already use one of the on-line services, then an electronic mail service could be really useful for quick communication.

Comms as a hobby is an increasing activity, and has much of the appeal that CB radio has. Many people enjoy the sociability of dialling up like-minded friends on the Bulletin Boards mentioned earlier, swapping news and gossip and getting hold of copies of useful programs. It's an addictive world, and if it appeals to you then be prepared for some sleepless nights (cheap phone rate, remember!).

Comms, like many things in life, is more fun with two. Your modem is only a tool, and for comms to be really useful you need someone to communicate with. And it helps if someone else pays your phone bills!

EXIT

Amstrad Training – £29.95!

With so many organisations trying to sell you training courses, you need to be selective. And if price is important too, the choice is simple – you need Reel-Time.

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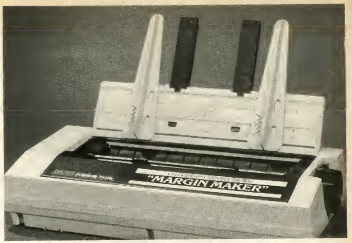
PC range: • Amstrad PC (1512 & 1640); • IBM/Compas (PC/XT/AT); • SuperCalc (for 3 & 4); • dBase II; • WordStar (3.3) • Desktop Publishing;
PCW range: • Amstrad PCW 9512 (& Locoscript 2); • Locoscript (PCW 8256); • The PCW Computer (for 8256/8512); • SuperCalc 2; • dBase II; • WordStar Professional (3.3); NewWord 2.

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8000+

Rational Solutions is pleased to announce the launch of

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The new enhanced version of their best-selling database program AtLast for the Amstrad PCW computers and CPC6128, also known as ***The Database Manager.***

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"Superb value for money and hard to pick holes in" – *8000 Plus*
"Powerful features. . . as clever as the user makes it" – *Amstrad Professional Computing*
"Many attractive features . . . its search features are particularly valuable" – *Computing With The Amstrad PCW*

But some of you weren't satisfied. You wanted even more features than were already packed into the program and improvements in the manual and user interface. We listened to you and now we are proud to recognise the contributions our users have made to the design of AtLast Plus

So now we thank you. All existing users of AtLast are offered AtLast Plus at half price. Send the front page of your old manual, your serial number and £19.95 to Rational Solutions at the address below and we will send you AtLast Plus

* FEATURES *

*** Data Capacity and Economy**
Can use all the available space on your disc up to maximum of 32,000 records or 4Mb per file. 10 files per database, 20 field arrays per record, 99 elements per field array, up to 79 characters per element. Records of 2000 characters are handled with ease.
Unused data space is not saved to disc and therefore use of disc space is optimised. Typically three times as many names and addresses can be kept on a floppy as on a fixed format system. Will operate happily on a single floppy machine or a hard disc if you have one

*** Seml – relational**
Records can be related between files so that you can switch from one record to a related record in a few key-strokes.

*** Report and screen layouts**
All screen layouts and report forms are user-definable using a built-in mini-word-processor and you can have as many as you like for each file. Examples are data entry screens, browsing screens, columnar listings, labels, letters. Any data item (field element) can be positioned anywhere and mixed with explanatory text as desired. Simple "default" forms are created automatically for each file.

*** Reports**
Data can be exported via ASCII files in any layout desired (e.g. for mail-merge via virtually any word-processor that has a mail-merge ability).
Listings can incorporate "head" and "tail" sections, with field totals, if desired.
Listing parameters can be re-used for successive listings, changing only those that need to be changed.

*** Data Entry**
Data can be entered and individual fields edited using full on-screen control, passing up or down through fields at will. Data entry forms will scroll up or down on screen as required.
All data is validated on entry according to its type.
An integrated environment means that you can search to see if a record is already there, using a selection filter if you wish, before adding, editing or deleting it. Index files are automatically updated without your even noticing.

*** Indexing/Sorting**
Up to 5 index files for any data file, each ordered on up to three levels (data items) with entries up to 30 characters. Uses state-of-the-art "B-trees" buffered for almost instantaneous access. No tedious sorting required.
Mixed case fields give true alphabetic ordering – no need to use upper case only.
Any index can be used for either listing or browsing order or for searching for individual records.

*** Selecting**
Selection conditions can be imposed on any field or combination of fields when listing using Equal To, Not Equal To, Before, Equal or Before, After, Equal or After, Contains (substring) or Does not contain, Selection conditions can now be used whin browsing or searching for individual records

*** Field Types**
A versatile range of 9 field types is available. Types include date (0-9999AD), time (HH:MM:SS), automatic serial numbers and pre-defined lists.

*** Data Security**
Any file can be protected from editing, adding to or deleting or any combination of these.

*** Data Re-organisation**
Data definitions can be edited without having to re-type data. In most cases, this is handled automatically.

*** Manual**
A new manual to make things easier for beginners.

*** Menus**
Menu-driven throughout, mostly requiring single key responses for ease of use. No programming language to learn.

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COMPETITION !!!

30 MEGABYTES OF DISC

We're giving away two superb ASD hard disc drives – enter the competition and say goodbye to those 'Disc Full' error messages.



It's amazing how many floppy discs you get through, isn't it? The reason, of course, is that they are so small. Programs here, data there, all that disc swapping, and when LocoScript tells you there isn't enough room on your disc to store the document you've spent the last six hours creating, that's the bitter end. The answer is – if you've got the money spare – to use a hard disc.

Hard discs are giant high-speed disc drives which plug on to the back of your PCW – there's no fiddling inside the machine needed to fit one, and they work on 8256s, 8512s and 9512s. Last month we reviewed three different hard discs, and we reckoned that the best in performance and value for money were those made by Birmingham-based ASD Peripherals.

This month 8000 Plus and ASD Peripherals are giving away two hard discs, one 20 Megabyte model (rrp £516.35) and one 10 Megabyte (rrp £343.85). Even a 10 MB disc can hold the equivalent of almost 60 sides of a 173k A-drive disc!

What you have to do

When we were writing our hard disc review last month, we were spoiled by having several models on loan. When it came to pack them up and return the review samples, we had to find our old floppy discs.

Now journalists being what they are, the 8000 Plus editorial office is a bit of a tip. Under piles of manuals, PCWs, printers, and other odds and ends we soon found five program discs containing our word processor, database, spreadsheet, accounts and graphics packages. The snag is, we never properly labelled our data discs and we don't know which is which.



By a strange coincidence, a long piece of string connects each program disc to its correct data disc, but the strings have all become entangled in the pile of junk in the office. What you have to do is follow the lines from each program disc and tell us which is the correct data disc. For instance, if you think the word processor data files are on disc 1, write "Word processor – 1" on your entry.

When you've got all five pairs, write them on a postcard or the back of a sealed envelope, with your name and address, and send it to *Hard Disc Competition, 8000 Plus, 4 Queen Street, Bath BA1 1EJ.* The first correct entry out of the editorial quagmire on Friday 6th May wins the 20 MB disc, the second gets the 10 MB disc, and the winners will be announced in the June issue. Normal rules apply: no correspondence, no multiple entries. Happy untangling!

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Clarity Guides are used by word processing trainers as the basis of their courses and by universities, polytechnics, government departments and businesses. Several MP's Lords, famous novelists and journalists are among the 20,000 delighted users of the Guides. Many have had it recommended by other users or have seen someone else's copy and wanted one for themselves.

LocoScript 1. The Clarity Guide 'Word Processing with LocoScript' (the improved blue and white 3rd edition) (ISBN 1 870075 00 5) covers the original LocoScript which comes with the PCW 8256 and 8512. Price £6.95

LocoScript 2. The Clarity Guide 'LocoScript 2' (ISBN 1 870075 01 3) Covers this improved and faster version of LocoScript. The Guide includes LocoSpell and designing your own characters. (Though written for the 8256/8512 most of the guide also applies to the 9512 and owners of this model will find it useful. Price £6.95

We can also supply the following for the PCW 8256/8512:

LocoScript 2 the program, with official manual. £19.95. **Locospell.** The spelling checker for LocoScript 2. Includes a Wordcount. £19.95

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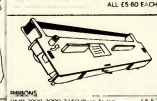
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AMSTRAD PCW PRINTER MAINTENANCE KIT FOR 8256/8512



Cleanprint is an innovation in printer maintenance. Printheads require regular cleaning if the quality of print is to remain constant. A build up of dirt and ink can impair legibility and ultimately damage the delicate equipment. Indeed, in the past the cleaning process itself could damage the very equipment it was trying to protect — until now!

The Cleanprint cassette contains an uninked ribbon, impregnated with a specially formulated cleaning solution. By simply replacing the normal inked ribbon with the Cleanprint cassette and running the printer in 'self-test' mode (or for approximately 60 lines of full character sets), the printhead will be clean enough to produce a quality of print as if it were new, at the same time safeguarding against costly damage to expensive machinery.

Recommended use for each cassette is 8 cleanings and each kit comes complete with 8 Cleanhand wipes for removing ink from hands and printer casings, along with a Cleanduster aerosol of compressed gas to blow away dirt from inaccessible areas of the printer.



The **Cleanprint** cassette will

- Remove ink deposits
- Maintain print quality
- Protect and lubricate the printhead

Simple to use and each kit comes with accessories to complete the cleaning process

ONLY £16.95

PLEASE SEE ORDER DETAILS OPPOSITE

A WORD ON PLAYS

Earning money writing fiction is more difficult than it seems, but radio drama can be a good place to start, especially with the BBC's new enlightened policies.

As part of its Young Playwrights Festival, the BBC is currently looking for new radio plays from writers aged 15-30. But you don't have to be 'young' to consider writing radio drama – the BBC offers the freelancer perhaps the largest and most wide-ranging market in the world.

Buying a PCW won't turn anyone into a writer, but it can, and does, turn unproductive writers into productive ones. The sheer tedium involved in writing rough drafts, rewriting the rough drafts, writing first drafts, rewriting the first drafts and so on, is reduced to virtually nothing, leaving the writer to concentrate on his or her story.

To most people, 'writing' means writing novels, but among the many facets of creative writing, and one of the most readily entered into by the freelancer, is writing for radio. The BBC produces something like four hundred new plays on radio every year, relying almost totally on freelance writers; for unsolicited material it is one of the best markets around. A 90 minute production on Radio 4 can earn an established writer £2,000 or £3,000, and while no-one in their right mind would consider writing a radio play just for the money (you could probably end up earning more per hour in your local hamburger restaurant) it can nevertheless be a pleasant reward for a lot of hard work and thought.

There's also the satisfaction of having your work performed on national radio, often by big name actors – the minimal time required for rehearsal enables them to fit in radio work between their various other commitments.

Sage advice

Writing a play for radio is a totally different discipline to writing for the stage, or the television. Even so, just as reading novels in vast quantities is the only way to judge the quality of your own work, so listening critically to radio drama is the best way to get a feel for that medium. The diversity and scope offered by radio is vast; whatever can be imagined can be portrayed, without recourse to expensive locations and effects. After all, you can set a radio play in Lanzarote without actually *going* there, whereas on TV viewers might notice that it was really filmed in Shepherd's Bush. Exploding spaceships can usually be dealt with by a sound engineer growling into a bucket, which again might not work quite so well in the visual arts.

It clearly takes definite writing skill to use that freedom effectively. 8000 Plus asked Shaun MacLoughlin, the Producer, Editor and Director of Radio Drama at BBC Bristol, what sort of advice he'd give the aspiring writers.

8000 Plus: What makes a good radio play? What makes a bad radio play?

Shaun MacLoughlin: "It's very difficult to generalise. A play which starts with a fairly clichéd situation – perhaps a husband and wife arguing at breakfast – often doesn't appear too promising, but good writing will rescue it. Similarly, a good idea can be wasted by ineffective writing for the medium."



▲ Many famous stage writers had their first successes on the radio

What are the classic traps that aspiring radio playwrights fall into?

"Really the only 'don't' of radio writing is, 'don't write TV scripts for radio'. The surest way to get your work sent back straight away is to submit a TV script and say it can be adapted for radio. The point is, that in even in today's very visual age, radio drama remains totally different to any other form of writing – an exciting, imaginative, and uniquely challenging medium to write for, and it's as delightful to exploit for the writer as for the listener. It appeals to the imagination in a way no other form of writing can – Arthur Askey said it was the only medium where you can sit on a saw in outer space. As the small boy is reported to have said when televisions started to make their first appearance, 'The pictures are better on the radio than on the TV'. The possibilities for invention are enormous."

What are the hallmarks of good radio writing?

"A radio play must keep the listener's attention. If the first minute isn't compelling listening, your audience will literally switch off. It's the old art



of storytelling – keeping the audience captivated, keeping up the tension."

Are there any themes or subjects to avoid – politics, sex and so on?

"Not particularly, it depends more on how it's treated. Obviously we want to avoid being preached at. The points most powerfully made are usually the ones made most subtly."

BBC drama relies almost exclusively on unsolicited manuscripts – how do you choose the plays to produce?

"In Bristol we have a handful of full time readers, and a few part-timers, who go through the manuscipts. The ones they recommend we have another look at during our weekly script meetings."

What's the general timescale of submission and production?

"We receive around two hundred unsolicited manuscripts a week, so it takes a while to come to a decision – perhaps five months on average. The time it takes between acceptance and recording varies, but the recording itself can often be done in a day or so.

"For the young playwrights festival, of course, things are going to be rather quicker – the closing date's in May, with the plays being broadcast in Autumn."

Is much rewriting necessary?

'Quite often, yes. This is where the director will work very closely with the writer, not to tell him what to change, more to advise him – 'Here my attention wandered, perhaps you could do so-and-so', or 'This line seems a little out of character, maybe she could say something like this' – we always try to be constructive."

What sort of restrictions are there on radio writing – number of actors, range of sound effects?

"The restrictions are more artistic than economical. Good actors can quite easily double up. The only time too many voices becomes a problem is in the same scene – if a character is introduced to fifteen people at a party, the listener will have no chance to keep track of who's talking to who!

"Of course the dialogue has to enable the listener to picture what's going on, but it mustn't be too explicit – 'This gun in my left hand is loaded' is the sort of thing to avoid at all costs! Your range of sound effects is virtually unlimited."

What about the money?

"A first-time writer will be paid around £15 per minute. Once you're established you can expect more – after three hours' broadcast time, you move up to the 'established' rate of £20 per minute. You get at least half this fee for a repeat within the week, more if it's repeated later."

What's the idea behind the Young Playwrights Festival?

"This is the first time we've run such a scheme. Radio Drama is a tremendously exciting medium, though its image is, unfairly, still a little old-fashioned. The Festival shows our commitment to younger listeners and writers – radio drama has an enormous amount to offer them.

We're hoping to make it part of university and school curricula."

Any final comments?

"Radio is very much a writer's medium. In television you can disguise a bad writing with some nice pictures, and I'm speaking as a convert from television. In radio, a bad script will mean a bad play, and nothing the director does can change that. But conversely a good script will mean a good play.

"Writing for radio is an excellent way to learn the art of dramatic writing in general – Pinter, Stoppard and Beckett all started out writing for radio. And with just one Radio 4 play, you can reach more people in a single afternoon – perhaps half a million listeners – than a West End production would in years."

EXIT

How to submit

The BBC's main market – and hence the main drama market overall – is in original plays written for radio. There is a demand for translations of foreign plays or adaptations of books, though you should check the BBC's interest in the work before embarking on it. Assuming you don't want to write the full play on spec, you can send a synopsis or storyline and a sample, perhaps the opening scene. Otherwise, you send your completed scripts to:-

Script Editor, Drama (Radio)
BBC
Broadcasting House
London W1A 1AA

For two weeks in autumn this year, BBC Radio is making all its radio drama placings available to young writers. They are looking for scripts from writers aged between 15 and 30, and plays should be 30, 45, 55, 75 or 90 minutes in length. The only way to gauge the length of a play is, unsurprisingly, to read it out to yourself!

Plays should be original, or adaptations of the writer's own work for radio. Scripts should be submitted by May 21 and sent to:

BBC Radio Drama Young Playwrights Festival,
Room 6121, Broadcasting House
London W1A 1AA

Another competition well worth considering is The Radio Times Drama Awards, one of the richest rewards in media drama with a total prize of £15,000 plus broadcasting fees. Plays must be original works adapted for radio or television. Radio entries must be between 45 and 60 minutes, and television entries between 50 and 60 minutes. Scripts to be submitted with an entry form which can be obtained by writing to:-

Radio Times Drama Awards,
PO Box 1AX,
33 Marylebone High Street,
London W1A 1AX.

The closing date for all entries Is June 3rd 1988.

Notes note

Guidelines on writing radio drama for the BBC are available on sending an sae to the Script Editor, Radio Drama, BBC, Broadcasting House, London W1A 1AA

Know your programming

The major drama slots on BBC Radio are:

RADIO 4:

The Monday Play (90 min)
Evenings, repeated Saturday afternoons. Allows for original writing on complex themes. Also showpieces classic plays of the theatre and novel adaptations.

Saturday Night Theatre (90 min)
Repeated Monday afternoon. Traditional 'family listening' slot with large regular audience. Plays or adaptations usually have strong narrative.

Afternoon Theatre (45, 55, 60 min)
Three times weekly, original works for radio.

Strong narrative line can be an advantage for daytime listeners. Varied themes.

Thirty Minute Theatre
Weekly. Drama equivalent of a short story.

RADIO 3:

No fixed format and no restrictions on length or form, but plays for Radio 3 "must be of considerable literary distinction in their own right, regardless of subject matter."

FEATURES (RADIO 3 AND 4):

No fixed format. Submitted suggestions should be accompanied by a detailed sample to enable a possible placing to be estimated.

● *Layout is such an important element in writing scripts for plays (on radio or stage) that standard formats must be pretty closely adhered to. Any changes or alterations, however slight, tend to mean complete re-laying out – while a major task on a typewriter, a PCW can handle all those awkward layouts and reformattings with ease. A full treatment of how to use LocoScript to lay plays out will appear in next month's 8000 Plus.*

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Access

LETAEDIT/LETAFONT

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There are two kinds of software on the market: glossy commercial packages with colourful boxes, and plain functional discs which do their job quietly and cheaply. Advantage, the Cheltenham-based user group, have just released a a pair of these budget programs that will allow you to define your own text fonts both for the screen and for the printer.

You get a disc with a dot-matrix printed label (you would think they could have used one of their own fonts to make it look a bit more impressive!) and what could be a bewildering range of files. Among the files are two called LETAEDIT.DOC and LETAFONT.DOC which contain the documentation for the two programs.

There don't seem to be any explicit instructions on what to do to actually run the programs, but it shouldn't take you too long to work it out. Type `LETAEDIT` and you can modify or redesign any of CP/M's 256 screen characters; type `LETAFONT` and you can print a file in any font.

This is what one of the fonts looks like when you print it out using LetaFont. OR YOU COULD EVEN TRY IT IN CAPITAL LETTERS.

Plough on through

There are 16 fonts named, rather mundanely, SET1 to SET16. Without descriptive names like 'OLDENGL', the first thing you will want to do is plough through them all to find the ones you like.

The quick brown fox jumped over the lazy dog

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG

LetaFont is a program to print out a document in any font. It assumes you have a file in ASCII form (eg. a LocoScript 'Page Image' file).

You can call up a list of all the fonts and text files and then just place the cursor over the correct one. High or draft quality and continuous or single sheet paper can be toggled on and off easily by menus.

It would perhaps have been more useful to find a description other than 'dual density' or 'normal density' printing, since dual density turns out to be double width printing. 'Widened print' is designed to cast a slightly grey shadow on the left hand side of the text to give the impression of depth. With the chunkier texts it can also give an impression of being written in Arabic.

Unfortunately, the fonts as printed aren't in true NLQ, and appear very grainy. The chunky texts can also appear very lined in high quality printing and certainly don't have the sharpness you might expect from the screen representation. This is because all the fonts are designed on 8x8 grids which are ideal for the screen, but far below the printer's normal resolution. To simulate high quality, LetaFont prints the same 8x8 pattern twice, slightly offset to appear bold and solid. There also seems to be some problem with the program picking up spurious characters in some ASCII files which is annoying.

All printing has to be done by running the LetaFont program. It would have been better if there was a way to modify (temporarily or permanently) the PCW printer's character set so that subsequent programs running from CP/M would naturally use that set.

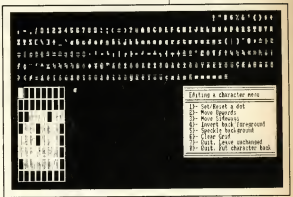
Roll your own

While the 16 supplied fonts show a fair amount of imagination (it is quite outstanding that one human brain should have managed to produce 16 'different' type faces from such a small grid), another problem with them is that you mightn't find a font you like, or you might want a special symbol that no-one else has thought of.

This is where the second program, LetaEdit, comes into its own. This allows you to design your own font. You can of course start from scratch but a much likelier plan is to load the font nearest to your tastes and modify it to suit.

PERSONAL PRINTING

Alec Rae has designs on a character designer program for screen and printer



The quick brown fox jumped over the lazy dog.

THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG

In practice this poses few problems other than the basic design ones of trying to fit the characters into a tiny eight by eight grid. You can call up any of the 256 characters in the ASCII set and show it on a grid divided up into pixels. Then you can adjust each pixel (switching it on or off with a single key stroke) until you have a version of the letter you prefer. This is the real problem – the eight by eight grid is very restricting and the last dot which you think will make it just perfect can often spoil it.

When you've perfected all the characters in your font you can save them either as a font file for use with Letafont or as a .COM file. If you take the second option then when you run the resulting .COM file the screen font is modified until you change it again or restart the PCW. This works well and it's quite fun seeing all your favourite programs producing error messages in the most unlikely characters.

Overall, this would be a handy adjunct to any programmer wanting to produce special screen characters, or any newsletter writer wanting a variety of different small headlines. However, the lack of true NLQ print means you can't really use the extra fonts for printing documents with – for that, SuperType and the other commercial font programs will still reign.

EXIT

The quick brown
THE QUICK BROWN
The quick brown
THE QUICK BROWN

PLUSES

- 16 different fonts
- You can edit the fonts as you like
- Simple to use and cheap

MINUSES

- Printing in high quality can be quite lined
- All printing has to be done by running LetaFont
- Get-you-going documentation is poor

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CP/M

THE GUIDE AT YOUR SIDE

If you're using a database, or any program other than LocoScript, then you're using CP/M. Organising your discs and running programs efficiently can be difficult when even the simplest information seems to be buried in a mass of technical details in the PCW manual.

Listed below are the most common things you'll need to do – copying files, finding out what's on your discs and so on. Each heading tells you what files you need from the CP/M master discs, exactly what to type, what might go wrong and how to correct it. First, of course, we're assuming that you are at the CP/M A> prompt. All the CP/M utility files we refer to are to be found on your main CP/M system disc (side number 2 for PCW 8000 series users) except where stated.

For regular 8000 Pius readers we've given you references to the issue and page if a topic was covered in more detail. The figures in italics are the page number(s) of related entries in the CP/M manual. (Numbers in brackets are pages in the 9512 manual).

CP/M background

Your PCW has up to three disc drives. 8256 and 9512 users have one floppy disc called the A drive, and a memory disc for temporary file storage called the M drive. 8512 owners also have a B disc drive. CP/M's prompt (eg. A>, B> or M>) tells you which disc is being used at the moment.

Remember that most of the operations listed here need to use a file from the CP/M master disc. Apart from DIR, DIRSYS, ERA, USER and TYPE (which are all special commands) whenever you type anything at CP/M's prompt it looks on diac for a .COM file of that name to run – for example, if you want to use the SHOW command you'd need to have the file SHOW.COM on your disc.

This can be tricky since if, for example, you want to see how much space is on your work disc you obviously can't put the CP/M disc in the drive at the same time! The thing to do is to copy the file you want to use from the CP/M disc onto the M drive (see the 'how to copy a file' entry). Once there, you can put your work disc back in the drive.

Suppose you were using the SHOW command to find out how much space there was on your A disc, and your CP/M prompt was currently A>. You would copy SHOW.COM onto the M drive, put your A disc back in and type `M:SHOW`, which makes CP/M look on the M drive to find SHOW.COM. (8512 owners can forget the file copying business and put the CP/M disc in whichever drive isn't being used. To find out how much space is free on a B disc, assuming your CP/M prompt was B>, you would put the CP/M disc in the A drive and type `A:SHOW`.)

You'll find it convenient for everyday use to have DIR.COM and PIP.COM on all your discs, since they are regularly used commands.

Formatting discs

You need to format new discs before you can store files on them. LocoScript 2 users can do this within LocoScript, Loco 1 and CP/M users need DISCKIT.

What's the difference between single density and double density discs? Any disc, whatever it says on the sleeve, can be formatted for use either in the A drive (CF-2 format) or B drive (CF-2DD format). B drive discs can store 706k of data and you can only use the disc one way in the drive; A drive discs can store 173k on each side. (There's no choice on the 9512 – all discs are CF-2DD format).

How to format discs (or re-format a current disc) insert your CP/M system disc, type `DISCKIT` [RETURN] and just follow the on-screen instructions.

Can one type of disc be reformatted as another? Yes, though all your old data will be wiped off, of course.

(#10 p49; *p37* (*p366*))

Examining discs

`DIR` is a built in command to get a disc directory. To use any of the DIR command's extra [FULL], you'll need the CP/M file DIR.COM.

Finding out what files are on a disc: Type `DIR`. If you type `DIR A:` `DIR B:` or `DIR M:` followed by

Renaming files

`REN BLAT.COM =ZAP.COM`

changes the name of the file ZAP.COM to BLAT.COM, though

Copying files

PIP.COM is the file copying utility. It always copies from group 0 to group 0 unless otherwise instructed. All PIP commands need the CP/M file PIP.COM. PIP takes the general form "`PIP` copied filename=original filename".

How to use PIP: `PIP M:=A:PIP.COM` copies PIP itself into the memory – if the words SETDEF and PROFILE.SUB mean nothing to you, use it by typing `M:PIP` in place of `PIP` below.

Copying single files on an 8256 or 9512: `PIP B:=A:ZAP.DOC` copies the file ZAP.DOC from the disc presently in the A drive to another. The PCW treats both drives as if they were in the same place, and will prompt you to 'insert the disc for B: into the drive'.

Copying on an 8512: Copying between two 'A drive' discs: put source (to copy from) disc in B, destination disc in A, type `PIP A:=B:ZAP.DOC` Between two 'B drive' discs: put source disc in B, type `PIP M:=B:ZAP.DOC`, then put destination disc in B, type `PIP B:=M:ZAP.DOC`.

Make duplicate of file on same disc: `PIP BLAT.XYZ=ZAP.DOC` makes a copy of ZAP.DOC called BLAT.XYZ.

Copy lots of files in one go: `PIP M:=A:*.BAS` copies all files ending '.BAS', ie all BASIC programs, into the memory. If you change discs, then `PIP A:=M:*.*` copies all files from M to A.

Making backups: For backups, `PIP M:=A:CHAPTER.*[A]` copies only those files which have been altered since the last time you copied them. (#18, p71)

Copying whole discs: DISCKIT allows you to copy the entire contents of a disc onto another of the same type – just type `DISCKIT` and follow on screen instructions.

If DISCKIT says 'Old format disc': Use PIP to copy files instead.

(#13 p25; *p24* (*p373*))

Examining discs

DIR is a built in command to get a disc directory. To use any of the DIR command's extra options like [FULL], you'll need the CP/M file DIR.COM.

Finding out what files are on a disc: Type `DIR`. If you type `DIR A:`, `DIR B:` or `DIR M:`, followed by [RETURN], you get a list of files on the specified drive.

Finding out how big a file is: Type `DIR A:[SIZE]` tells you all files on drive A together with their sizes.

Listing only a selection of files: `DIR A:*.BAS` will list all files on A whose names end in '.BAS', ie. all BASIC programs. Alternatively `DIR B:*.BAS [EXCLUDE]` will list all files on B except BASIC programs

Finding out what's in a file: Type `TYPE ZAP.DOC` and the contents of that file are displayed on the screen, if it's a simple text file. If it's a LocoScript document or a '.COM' file the results will be gibberish!

(#10 p49; *p38* (*p369*))

Changing your standard disc drive

The CP/M prompt on startup is A>, which means that it will read and store all files on disc drive A. Type `B:` or `M:` to change to B or M respectively. 8256 and 9512 owners have a drive B too – it's a different disc in drive A! Type `B:` and do something like `DIR`, and you'll be asked to insert the correct disc.

(*p16*(*p379*))

How much space is left on the disc?

(SHOW.COM needed) Typing SHOW will give the free space on all disc drives which you've used in your current session.

(*p21* (*p376*))

Renaming files

```
REN BLAT.COM
=ZAP.COM
```

changes the name of the file ZAP.COM to BLAT.COM, though the file itself remains unchanged

Erasing files

Erase whole disc: Just reformat the disc with DISCKIT and it is effectively wiped clean.

Erase single file: Type ERA and its name – eg. `ERA B:ZAP.DOC`.

Erase lots of files: `ERA M:*.*` erases all files on drive M. `ERA A:*.BAS` erases all files on A ending in '.BAS', and asks you for confirmation of this drastic step.

Erase selected files: (ERASE.COM needed) `ERA *.*[C]` lists each filename in turn and asks you to type Y or N to delete it or not.

(*p12* (*p375*))

Which disc for which file?

(SETDEF.COM needed). Normally if you type a command at the A> prompt CP/M will look for its associated .COM file on the A drive. You can alter this. Type `SETDEF M:,*` and the PCW will look for files first on the M drive, then on your default drive. Saves you typing 'M:PIP', 'M:DIR' etc every time.

(#11 p26; *p50* (*p414*))

Startup discs

Make a self-starting disc for any program: Use PIP as above to copy onto a blank disc all the files you normally use to run the program (the manual will tell you which are necessary). Check there is at least 47k free (if there isn't you can't make a start disc) then copy SUBMIT.COM and J14CPM3.EMS (the number after J might be different) from your CP/M disc.

Suppose the program you want to run is in a file called ZAP.COM, so you normally run it by typing ZAP. Create a text file (either use RPED or LocoScript and make a 'simple text' ASCII file) called PROFILE.SUB which contains commands exactly as you would type them to CP/M's A> prompt. To run ZAP, PROFILE.SUB should contain only one line, `ZAP`.

To use, just switch on and insert your self-start disc. CP/M automatically runs any commands it finds in PROFILE.SUB when it start up, so your program auto- starts.

(#11 p25; *p46* (*p405*))

Copying discs

Copying an A drive disc: Type `DISCKIT`. DISCKIT will prompt you to insert the disc for A: into the drive.

Copying an A:B: drive disc: Type `DISCKIT`. DISCKIT will prompt you to insert the disc for A: into the drive. Then it will prompt you to insert the disc for B: into the drive.

Copying an 8512: Copying between two 'A drive' discs: put source (to copy from) disc in B, destination disc in A, type `PIP A:=B:ZAP.DOC`. Between two 'B drive' discs: put source disc in B, type `PIP B:=A:ZAP.DOC`.

Copying whole discs: DISCKIT allows you to copy the entire contents of a disc onto another of the same type – just type `DISCKIT` and follow on screen instructions.

If DISCKIT says 'Old format disc': Use PIP to copy files instead.

(#13 p25; *p24* (*p373*))

Printing

Get image of screen printed out: Pressing [EXTRA] and [PTR] gives a 'screen dump'

Echo all screen output to printer: Pressing [ALT] and P simultaneously makes everything which subsequently appears on screen also go to the printer. [ALT] and P again turns this feature off.

Make a record of all printer output on disc file: (PUT.COM needed, side 3 of PCW 8256/8512 discs) Insert Side 3 of Systems Discs and type `PUT PRINTER OUTPUT TO FILE NAME.DOC`[RETURN], then insert the disc to store the output on. Everything which appears on the printer will also be stored in a file called NAME.DOC until you turn this off by the command `PUT PRINTER OUTPUT TO PRINTER`.

(*p80* (*p473*))

Reading LocoScript documents in CP/M programs

LocoScript stores its text in a special way, and CP/M programs can't read it. If you have a database or other program which allows you to 'import data from text files' then you must make an ASCII file of your Loco document. This converts it into a plain text form that CP/M can read, but loses any underlining etc. Use the [f7] menu in LocoScript 1, [f1] in Loco 2. Choose the 'simple text' option.

LocoScript files in CP/M

The eight different LocoScript groups are help in CP/M's user areas 0 to 7, and the limbo files for each group in user areas 8 to 15. The ordinary DIR command will list out only files in the first group, group 0.

Directory of files in a given group: Change to the correct user group (eg. 5) by typing `USER 5`, or just `5:` for short, then DIR. Get back to group 0 by `0:`.

Directory of all LocoScript files: (DIR.COM needed) `DIR A:[USER=ALL]` lists all LocoScript files and Limbo files on drive A. (#15, 25)

Copy LocoScript files: (PIP.COM needed) `PIP B[G4]:=A:SPLAT.DOC[G2]` copies the document SPLAT.DOC from LocoScript group 2 of disc A to group 4 of B. `PIP B:[G3]=A:*.*[G3]` copies all files from group 3 of A to group 3 of B. (#2, 68; #4, 62; #13, 72)

Erase LocoScript files: First type `USER 5` or whatever group the files are in. Then proceed as above. Return to group 0 by `USER 0`. (#11 p70)

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VISA

THE BUSINESS OF COMPUTING

The 1950s saw computers moving from universities into businesses. Ben Taylor monitors the changes.

By 1950, virtually every important university and scientific institute in Europe and America had a computer or were investing in a crash-course to build one. Manchester had the Mark 1; Cambridge had EDSAC; Pennsylvania had EDVAC; the National Physical Laboratory had ACE; and so on. In those days every single computer was custom built as a research project; you didn't just go along to your local high street store and say, "I'd like to buy an EDSAC please."

At the same time, the more far-sighted members of the business community were beginning to prick up their ears at the new developments, and they approached the key academics to try to understand how computers could make profits for them.

The British mathematician and computer scientist Alan Turing did a lot of consultancy work installing computers. Being an academic the only thing he had ever used a computer for was solving complex numerical problems, the kinds of thing which the average businessman doesn't often do. In a report for the government of the day Turing wrote, "in the end we shall probably need a dozen or so powerful computers at key installations to service the country's computing needs". Brilliant though he was, he totally failed to foresee the world of information technology where computers were used not as number-crunchers but as information storage and retrieval machines. Today there are over a million computers in Britain alone.

First bite of the cake

The first company in Britain to computerise was J.M. Lyons the bakers. In 1953 they engaged Maurice Wilkes (designer of EDSAC and soon to be the first Professor of Computing at Cambridge) as consultant to install a computer for them. It was called LEO, for 'Lyons Electronic Office', had 2k of memory, used a punched card and tape reader for its input and sent the output to a printer. The next year Lyons set up a special company called LEO Computers to market their developments, and over the next few years the LEO 2 and LEO 3 machines came along. LEO Computers was eventually bought up in a series of mergers that led to the formation of Britain's only major computer manufacturer, International Computers Ltd, or ICL as it is better known.

LEO was arguably the first true business computer, running the company accounts and so on, but as usual that was about the end of Britain's pioneering supremacy in computers. The Americans were coming.

IBM in the '50s was a typewriter and office equipment supplier, although it had its roots firmly in information technology as it had grown from Herman Hollerith's company selling census-processing machines to the US government in the 1890s. Because of their established network of business machine leasing, IBM were ideally poised to exploit the computer boom, and in 1952 they launched their first computer, romantically named the 701. It was a modest success, but lacked the external storage facilities needed for major data processing work, and many businesses still didn't see the benefits of using a computer.

The switch to transistors

As computers moved into the commerical world from academia, they needed to become more robust. Don't forget that at this time vacuum tube valves were the only electronic components available, and they were bulky, hot and temperamental. Valves work a little like light bulbs in that they need to have a hot filament to work; like light bulbs, the filament wears out after a while and the valve breaks. The average life of a valve was probably somewhere between 1,000 and 10,000 hours' use.

The trouble is that as computers grew in complexity they used more and more valves. Some computers had 10,000 valves, which meant that (simplifying the statistics a bit) you could expect a valve to blow every hour. When the failure rate became too high the operators would change every valve in the machine,

▼ The very first transistor ever made. Shockley, Bardeen and Brattain won the 1956 Nobel Prize for their work.





▲ IBM's first commercial computer, the 701

Manchester 2, Rest of World 0

It took five years for the transistor to be successfully adopted by computer designers, but in 1953 Britain's Manchester University (who had run the world's first computer program in 1948) once again led the world by developing the first all-transistor computer

Turing machines

Ever since machines were invented – never mind computers – people have wondered what their limits are. There's a tendency to think that every new invention is about to solve all the world's problems at one stroke.

In the 1930s, before any of the electronic computers had actually been built, Alan Turing began to wonder how computers would be programmed and what their limits were. He designed a very simple abstract computer which has since become known as a Turing Machine. This machine consists of a motorised box with a pen underneath it, and an arbitrarily long roll of paper marked into squares.

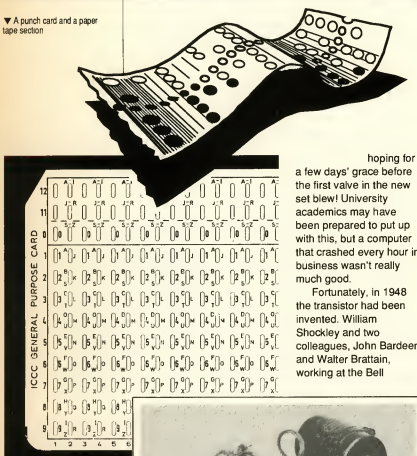
The Turing Machine could be given four instructions: move forward a square, move backward a square, make a mark in the current square or erase a mark in the current square.

Turing wrote a series of programs for his hypothetical machine to do things like working out prime numbers (mathematicians spend their whole time working out the highest known prime number, or calculating the 10,000th decimal place of π), all with these four instructions. When the Machine had finished, the number it had come up with could be read off the paper tape depending on which squares the Machine had marked.

With the aid of his thought-computer, Turing proved that you only needed a very few simple instructions to run a program. This philosophy is back in fashion today as manufacturers are rushing to make computers based on superefficient 'RISC' microprocessors – RISCs are Reduced Instruction Set Chips, which can only do a few basic operations but very fast.

Turing also proved that there were some types of problem his Machine couldn't reliably solve, and since his machine could simulate any other computer then by implication there are some problems not soluble with conventional computer designs.

▼ A punch card and a paper tape section



hoping for a few days' grace before the first valve in the new set blew! University academics may have been prepared to put up with this, but a computer that crashed every hour in business wasn't really much good.

Fortunately, in 1948 the transistor had been invented. William Shockley and two colleagues, John Bardeen and Walter Brattain, working at the Bell Telephone Labs in America (their equivalent of our British Telecom) were researching the electrical properties of the semiconductor elements, principally Germanium. They discovered that by adding suitable impurities to the Germanium you could simulate the effects of a valve. In other words, by altering a voltage on one input wire to the transistor you could turn an electrical current in a different wire on or off. What's more, transistors used almost no power, produced very little heat, and seemed to have an almost indefinite life.

One of the first commercial computers to be built from transistors was IBM's highly popular 1401, the successor to the valve-based 701, released in 1959.

Storage story

As computers like the IBM 701 began to spread, people began to realise that what they wanted wasn't a vast calculator but an efficient means of storing and retrieving data. This meant that mass storage devices became a vital part of computer technology – can you imagine your PCW without a disc drive?

The earliest storage mediums were punched cards and paper tape. They were used both as input/output devices and storage devices. To write a program you would go to a card punch console, which was an ordinary typewriter keyboard. You would type in each line of your program, and the machine would punch it onto a card. Eventually you would get a stack of cards which was your program. You would pick them up, walk across the room to a card reader and drop them into the input hopper. The reader would decode the holes in the cards and pass your program through to the computer. You could then keep the cards and run them again another day.

Cards had 80 columns on them – which determined the maximum line length allowed. Paper tapes were of course just one long strip, but worked in much the same way. Paper tape was more fragile and tended to rip badly if mishandled, so cards tended to be more popular.

In general, to code a letter of the alphabet onto a column of a card you needed to punch two holes in it, and to code a digit was one hole. It was possible to punch the holes by hand without an expensive mechanical card puncher. Paper tape on the other hand punched the ASCII values of characters as a series of seven or eight holes, which made it impossible to punch by hand.

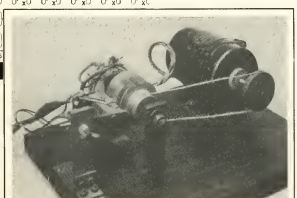
Soon, magnetic tapes came along. Magnetic recording was nothing new, and had been used in the audio industry for years; it was only a matter of adapting reel-to-reel tape drives to cope with the high speeds required by computer, and to record binary '1's and '0's instead of the latest Elvis Presley hit.

Tapes are a bad storage medium because they record everything sequentially. If the piece of data happens to be at the end of the tape you've got no option but to sit and wait while it winds through – this could tie the computer up for five minutes or more. A much better solution is the magnetic disc store, developed by A.D. Booth. This is the magnetic version of a record player, the virtue being that as long as you know where on the disc the information you want is you can go straight to it. Early disc drives were known as 'drum stores', just as early audio recordings were in fact made on cylinders.

EXIT

Turing's death

Alan Turing, the mathematician who had done so much for Britain's computing industry and war effort, committed suicide in 1954. He had been 'unmasked' as a homosexual, and since that was a crime in the 50s he lost his job and all funding for his research. Sadly, it was all too much for him.



▲ A.D. Booth's experimental drum store, the distant ancestor of today's disc drives

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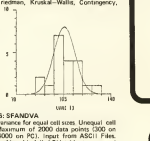
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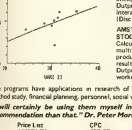
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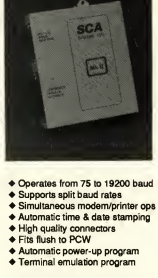
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ACCESS

LANGFORD'S PRINTOUT

In which science fiction author and PCW owner David Langford presents some monthly musings



MYTHICAL BUT TRUE

One month it's UFO sightings, another brings us bending spoons: today the computer world is buzzing with tales of electronic AIDS. How worried should we be? At first I suspected a classic case of modern myth, as documented by Jan Harold Brunvand....

Prof. Brunvand's recent *The Choking Doberman* is a survey of 'urban folklore' – fascinating but untraceable anecdotes which always happened to 'a friend of a friend'. My attention was caught by "The Mystery Glitch", a computer-caper story about joke messages in an operating system, which the Professor feels is just a legend.

You can usually detect folklore by totting up the improbabilities. In the 'Choking Doberman" story, it's unlikely that a guard dog would succeed in biting off a burglar's fingers; doubly unlikely that they'd stick in its throat; trebly unlikely that the vet who extracts them would jump to conclusions and give the dog's owner a warning phone-call; quadruply unlikely that the mutilated burglar should later be found groaning under the bed.... Conversely, a feasible joke program needs only one improbability – that someone would be idiot enough to write it.

Several harmless japes are going the rounds on other machines, and no doubt PCW versions exist already or soon will... like DRAIN, which reports water in your disc drive and goes through gurgling 'drain' and whining 'spin dry' cycles.

Less harmless are the ugly 'public domain' programs which are nice mindless games, but when loaded erase every disc in sight, with derisive messages about wasting your valuable computer on fripperies.

Now we have 'viruses' which literally infect programs or discs, spreading invisibly and leaving a trail of ruin. Despite the media scare, I stayed sceptical for a while. Too many suggestible folk have been persuaded to confirm spurious UFO sightings, or to notice for the first time that one of their keys is slightly bent.

When curiosity became too strong, I spent an evening devising a test program which will never be allowed out of the Ansible secure laboratory. The bad news: it worked and (given a little assembler expertise) was horribly easy. This research 'virus' attached itself to program files which in turn would invisibly spread the virus on being run. When no uninfected files were found, contaminated programs would beep mysteriously before running as normal.

It was depressing to confirm that genuine, non-folklore virus programs could be written for any computer I use, including the PCW, and to reflect that a malicious programmer needn't stop at occasional beeps.

The gap between theoretical nasties and the real world is apt to close rapidly. On Amiga computers, viruses have stopped being 'someone else's problem' and become a serious pest – dealers are flogging 'antibody' programs. The latest epidemic affects IBM-type machines, including the Amstrad PC. After lurking for years in SF and folklore, the virus seems to be a bad idea whose time has come.

How do they work?

Simple 'bogusware' relies on your running that game you got from a mischievous friend, an electronic bulletin board or a public-domain disc. A virus deliberately copies itself to new locations and spreading from disc to disc. Mine worked by attaching copies of itself to .COM program files and rewriting them to run the virus code before the main program.

The scourge now afflicting IBMs in America is more insidious: it perverts the actual operating system on a start-up disc. When you've started up from an infected disc, the virus copies itself to any other start-up disc which is accessed... even if the 'access' consists of no more than a directory listing. Each time it copies itself, the virus clocks up an internal counter on the Typhoid Mary disc; and when the count passes four (ie. four new plague-carriers are loose), every disc in the machine is wiped so thoroughly clean that no recovery service' can retrieve a word of text.

That's not very nice, is it?

How not to die of ignorance

The good news is that the Amstrad PCW is a special case. You're less likely to be threatened, because:

• You probably just use LocoScript. Although a virus which affects LocoScript start-up discs can't be ruled out, the technical difficulties are immensely greater than in CP/M.

• Relatively few PCW users hang out in the low haunts of dedicated computer freaks, promiscuously swapping software and possible nasty infections.

• There are few PCWs in America, the main source of virus programs. Maybe in Britain, yobs who think this kind of thing funny have less expertise and prefer dropping concrete blocks off railway bridges.

• Because the PCW is a budget machine, you probably don't own a hard disc. Having the equivalent of several dozen floppies sabotaged is far more traumatic than losing one or two.

If a PCW virus does emerge, the precautions are obvious:

• Be careful where you get software. If you only use what comes with the machine, no virus can reach you. New commercial programs should also be safe. Reputable public-domain sources check what they pass on, but are marginally riskier: library organisers aren't infallible.

• Flip the write-protect tab on start-up discs, where possible. No trouble with LocoScript; CP/M's 'submit' procedure creates temporary files, so a CP/M disc which automatically loads a program mustn't be write-protected.

• If your PCW cohabits with alien discs, watch for virus symptoms. Do program files (names ending in .COM) or hidden start-up files (ending in .EMS) have larger file sizes than you remember? Does the space on the M drive seem to have shrunk? Do mysterious 'read only' error messages appear when you try some innocuous access (like a directory listing) to a write-protected disc? (A virus could be trying to copy itself.)

Don't panic yet. But users of other computers are learning that when you sleep with a strange disc, you sleep with all its old mates

Curse you, Red Baron

My professional pals fondly remember the 'Beethoven Bug' in a well-known British mainframe computer. This simply printed out 'Happy Birthday Ludwig!' on Beethoven's birthday. Why Beethoven? Consult the *Peanuts* strip, once all the rage among computer folk. In those days the machine's first chore each year would be to print out Snoopy calendars, and hackers knew that a startling percentage of 'secure' passwords would turn out to be PASSWORD, PEANUTS or SNOOPY.

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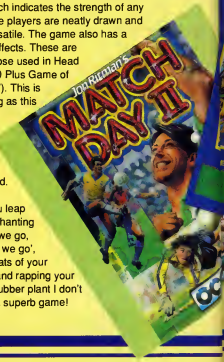
And why not? Matchday II is a football simulation which gives you all the spills and thrills of the real thing. The object in both is the same: eleven players aim to kick a ball through two white sticks, preferably those of the opposition. The only thing missing from Matchday II is a referee at which to hurl your expletives.

This is a game for one or two players so you can either pit your skills against a friend (though such friendship will be inevitably short-lived) or the computer. When playing against the computer, three levels of difficulty are possible. One of the several menus also provides an unusual 'twin-player' option which means that two players can be controlled at the same time instead of the usual one.

As well as having control of the player nearest to the ball, the keeper is also under your control, though you can opt for computer control if you prefer. At the same time, the game includes an element of strategy and you can choose attacking or defensive tactics both before and during the match. League and Cup competitions are both available. In the latter extra time is played if sides are drawing at the end of 90 minutes.

The joy of the game is the way the program simulates real football action. Once you have decided on what features you want to include, the match begins and is displayed in detail on the screen. A range of passes are possible, and players can perform an impressive range of movements – tackling, jumping, volleying and heading the ball. It is also possible to obstruct an opposing player without being penalised. As this suggests, there are no free kicks in the game but there are corners, throw-ins and goal kicks.

At the top of the screen is a minute clock and next to that a kickometer which indicates the strength of any potential kick. The players are neatly drawn and appropriately versatile. The game also has a range of sound effects. These are reminiscent of those used in Head Over Heels (8000 Plus Game of the Year for 1987). This is not that surprising as this game has been written by the same programmers, Jon Ritman and Bernie Drummond.



If Matchday II doesn't make you leap round the room chanting tunelessly 'Here we go, here we go, here we go', ripping up the seats of your brand new sofa and rapping your rattle round the rubber plant I don't know what will. A superb game!

PLUSES
- An excellent range of options
- Faithfully simulates the real thing
- Provides player with a high degree of control over what happens
- Clear graphics, crisp action

MINUSES
- It's so addictive it might kill the game off for good

GRAPHICS	■■■■■	LASTING APPEAL	■■■■■
ADDICTIVENESS	■■■■■	VALUE VERDICT	■■■■■

FILTHY RICH

£9.99 ● Wadd Soft (PO Box 37, Lytham St Annes, Lancs FY8 3AY) ● All PCWs

It has come to my notice recently that there are many unfortunate people in our society who would who rather sit down and read The Brothers Karamazov than spend their time watching what can only be described as high drama – Crossroads, Neighbours, Sons and Daughters... Still, perhaps this strategy game (subtitled 'The American Soap Game') might teach such philistines the error of their ways.

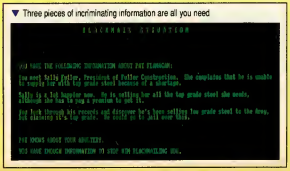
As in all good soaps, Filthy Rich concerns itself with familiar family problems – envy, greed, desire for power and so on. The main aim of the game is to gain control of your entire family's assets, which in this case run into millions of dollars. All you need to do is accumulate – by whatever means available – fifty-one per cent of the shares and thereby assume presidency of the family corporation.

You take on the role of any one of seven members of the family, each one of which is endowed with particular idiosyncrasies. One for example may have a predilection for snorting cocaine; another may have an uncontrollable sex drive; another might like a tipple or six occasionally.

In a family so riddled with vice, the main weapon can only be one thing: blackmail. Most of the game play is concerned with discovering information about the other members of your family, information which can be used to blackmail them and thereby control their shares.

Three linked items of information are all that are

▼ Three pieces of incriminating information are all you need



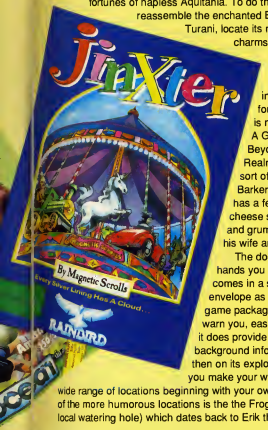
JINXTER

£24.95 ● Rainbird (01-631 5373) ● All PCWs

It seems to me that since I was born, nothing has gone right. I blame education, the government, the electric meter reader, indeed anyone I can think of. Perhaps countries go through periods of bad luck too? In Jinxter, for example, the whole country of Aquitania is experiencing an extended run of misfortune. Surprisingly, this has nothing to do with governments or other powers of darkness.

No, the culprits in this case are the Green Witches, a secret Masonic-like sect. This viridescent group of cranks spend most of their spare time giving people good reason to be unhappy – bursting water-pipes, blocking drains, erecting nuclear power stations and so on.

It's your task to save civilisation as we know it (that's presuming you reckon it's worth saving) and restore the fortunes of hapless Aquitania. To do this you must reassemble the enchanted Bracelet of Turani, locate its missing charms and direct its power against the Greenies.



To help you in your quest for the bracelet is no other than A Guardian from Beyond the Realms of Time, a sort of Ronnie Barker figure who has a fetish for cheese sandwiches and grumbles about his wife and kids.

The document he hands you – which comes in a sealed envelope as part of the game packaging – is not, I warn you, easy reading but it does provide important background information. From then on its exploration time as you make your way through a wide range of locations beginning with your own house. One of the more humorous locations is the the Frog and Giblet (a local watering hole) which dates back to Erik the Rather Unconvincing, that famous historical figure that every young schoolboy should know about but doesn't.

Each location is detailed and well-written, and some are supported by excellent illustrations. There is also a good range of puzzles which should keep you busy. If catching mice isn't your forte then you can indulge in a little bull-fighting instead.

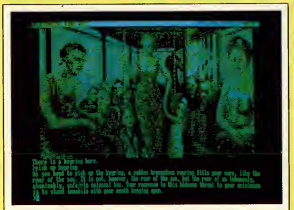
The text is essentially comic in tone with some nice humorous touches. Examining the telephone, for example, resulted in the following response: 'The telephone is a telephone, just like a red one, except it's green'. However, though the game purports to parody conventional adventures, the cliches of adventure games could have been ridiculed much more vigorously.

Still, Jinxter is an excellent adventure game and maintains the high standards set by The Pawn and Guild of Thieves, two of the best adventures from last year. All you need to complete it is a bit of luck. But let me assure you, there's not a lot of it about!

PLUSES
- Well-written descriptions, strong on atmosphere
- Excellent graphics
- Coded hints supplied for the impatient

MINUSES
- Initially, the scenario is confusing

ATMOSPHERE ■■■■■ CHALLENGE ■■■■■
INTERACTION ■■■■■ VALUE VERDICT ■■■■■



▲ 'It's a dog's life' says the Guardian from Beyond the Realms of Time

necessary. However, you must be careful to stay out of trouble yourself, otherwise you'll end up being blackmailed too!

The main game screen displays all the exotic places you can visit in search of incriminating information. The Freudian Slip Sanatorium, The Humpalot Massage Parlour and L'Hotel Du Bonk are just a few more memorable examples from the 24 locations available. As well as locations, this screen also gives details of your shares and cash and, below that, the current state of the dollar.

At each location a number of options, displayed numerically, are open to you. Such options differ according to location but more often make it possible for you to indulge in your distinctive vice, whether it be sex, drink, drugs, gambling or stealing.

There are twenty variations of the game in all with each one providing a different set of characters and different blackmail information on the other members of your family. Each game is also divided into twenty-six 'episodes' to simulate an actual television series.

Filthy Rich is a strategy game which becomes progressively more demanding as you play higher levels. Though the humour is palatable in the main, some of the responses are not only a little bald but also repetitive. There are only so many times that sleeping with a Systems Analyst from Baltimore can be the exhilarating experience it's supposed to be.

EXIT

PLUSES
- Parodies the American soap very well
- Good humorous tone in the main

MINUSES
- Flipping from screen to screen is very tiring on the old optic nerves
- The gameplay is a little too repetitive
- Location descriptions non-existent

ATMOSPHERE ■■■■■ CHALLENGE ■■■■■
INTERACTION ■■■■■ VALUE VERDICT ■■■■■

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DISC EXPANDER

Locomotive Software's Richard Clayton – knower of all things knowable about the PCW – explains how to squeeze more files onto your B-drive discs.

Everybody now knows that Amstrad no longer recommend special types of floppy disc for use in drive B of an 8512, or for use with the new 9512. The original advice to use special discs is now seen as ultra-cautious since normal discs work perfectly well. But even normal discs are expensive compared to the more common 5¼" floppy discs, so any technique to squeeze more data onto them is welcome. This article explains how to use the second side of a B-drive disc to hold 29k or even 58k more files.

The technique is simple. Find a new disc, or a spare one anyway! Now use DISCKIT or LocoScript 2 to format it twice, once on each side, as detailed in the instructions below. You might think the second formatting operation totally redundant, but in fact the disc retains some record of the first formatting as you'll see.

You should now type in and run the BASIC program shown. (If you are uncertain what to do, see the 'How to type in a listing' box on our Listings pages later on.) When it prompts you, insert the disc the way you did for the first format operation and some 'red tape' will be written onto the disc. This ensures that CP/M and LocoScript properly understand the nature of the 'second side'. You can now use the disc as a normal 706k disc with side A to the left (or up in a 9512), and by turning it over you will have an extra 29k of storage (or 58k on a 9512).

Why and wherefore

The reason this works is that the double-sided disc drives as used by the 9512 and 8512 B-drive have two read/write heads, one on each side of the disc, and these heads are offset by 2.032 millimetres. This gap corresponds to 8 tracks of data. Normally you shouldn't 'turn over' your B-type discs, but if you do there is a small area of disc which hasn't been reformatted. It is this area which is being exploited. The BASIC program is merely writing information into the disc's 'bootstrap sector' to record which member of the PCW family of disc formats is present, and thereby ensuring LocoScript and CP/M only use the valid area.

8512 instructions:

1. Format the disc in drive A with side B to the left
2. Format the disc in drive B with side A to the left
3. Load the BASIC program and RUN it.
4. When the program asks you to, place the disc in drive A with side B to the left and press [RETURN].
5. You now have a disc with a 29k second side! You can read and write to the disc in drive A, and read it in drive B.

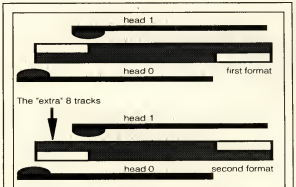
9512 instructions:

1. Format the disc in drive A with side B uppermost
2. Format the disc again in drive A with side A uppermost
3. Load the BASIC program (make sure you have changed line 260 to read `tracks%=16`) and RUN it.
4. When asked, place the disc in drive A with side B uppermost and press [RETURN]
5. You now have a disc with a 58k second side! You can read and write to it normally.

Alert readers will wonder why the 8512 instructions use drive A for the extra formatting, whereas using the double-density drive B would give you the full 58k extra like on the 9512. Well, you can do this if you wish, but the disc can only be used with LocoScript 2. This is because LocoScript 1 and CP/M Plus v1.4 contain incorrect code in the disc reading area, but on LocoScript 2 and the 9512 the relevant code has all been rewritten and so it can cope with what alleges to be a single sided, double density disc.

You may find you have to press the [STOP] key after turning the disc over, to tell CP/M that you have changed discs.

Maybe by next April 1st disc prices will have fallen so far that formatting both sides of double-sided discs will no longer be necessary. EXIT



▲ How the extra space fits on your disc

Disc swapping

Amstrad used to sell special high quality 'CF-2DD' discs for B-drives, but stopped doing them in 1986, saying that the cheaper, ordinary CF-2 discs were quite adequate. You simply decide which disc drive you are going to use the disc in (A or B), and choose the appropriate formatting option in DISCKIT.

```
100 MEMORY &HC000
110 FOR k=0 TO 81:READ a:sum=sum+a:POKE &HC281+k,a:NEXT
120 IF sum<>9393 THEN PRINT "Error in DATA statements":STOP
130 DATA &HC3, &H00, &H00, &H32, &H80, &HC2, &HC9, &H7E
140 DATA &HD6, &H41, &H4F, &H1A, &H32, &H80, &HC2, &H2A
150 DATA &H01, &H00, &H11, &H57, &H00, &H19, &H22, &H82
160 DATA &HC2, &HDD, &H21, &H00, &HC2, &HCD, &H81, &HC2
170 DATA &H92, &H00, &HD2, &H84, &HC2, &H06, &H01, &H11
180 DATA &H00, &H00, &H21, &H00, &HC0, &HD5, &HC5, &HCD
190 DATA &H81, &HC2, &H86, &H00, &HC1, &HD1, &HD2, &H84
200 DATA &HC2, &H21, &H02, &HC0, &H3A, &H80, &HC2, &H77
210 DATA &H2B, &H7E, &HE6, &H80, &H77, &H2B, &HCD, &H81
220 DATA &HC2, &H89, &H00, &HD2, &H84, &HC2, &H9F, &HC3
230 DATA &H84, &HC2
240 patcher=&HC288
250 drive%=ASC("A")
260 tracks%=8: REM set tracks%=16 if this is a 9512
270 PRINT"Hit [RETURN] only when disc is in drive "+CHR$(drive%)+":...";
280 INPUT a$
290 CALL patcher(drive%,tracks%)
300 rc=PEEK(&HC280)
310 IF rc=255 THEN PRINT "Disc successfully altered":END
320 PRINT "ERROR: Disc was not altered - reformat both sides and try again"
```

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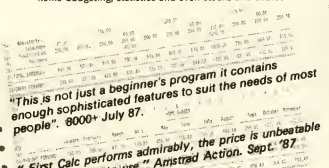
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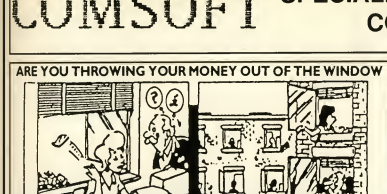
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TUTORIAL 3

IF ONLY...

Part three of our BASIC series gets to IF statements and other diversions

A computer program, looked at simply, takes some data in at one end and produces results at the other end. In between, the computer has to look at the data and make decisions on what to do – this in-between bit is of course the program, the bit you are trying to learn to write by following this series of tutorials.

In past months all the example programs have been a series of lines which BASIC has dutifully run one after the other. This month you'll learn how to control the order that lines are run in, which is when programming starts to be really useful. The simplest command to master is the 'GOTO', which does much as its name suggests. Take a look at this listing:

```
10 total=0
20 INPUT "What is the number to add on";number
30 total=total+number
40 PRINT "Total so far is";total
50 GOTO 20
```

This is a program to add up a stream of numbers. As ever, start BASIC going, type in the listing and type RUN to get things going. The program assumes that the running total at the start is zero; you are asked for a number to add on to the current total, and when the program has worked out and printed the sum, line 50 makes the program go back to line 20. The question is repeated and the program goes on totting up and looping until you press [STOP] to break out of it.

Capital idea

BASIC always prints its own special key words in capitals (PRINT, INPUT etc.) but leaves variable names in whatever case you typed them. If you get in the habit of typing everything in lower case, you can check that you've made no mistakes because when you LIST the program out, correctly typed keywords will appear on the screen in capitals.

True or false?

To make the GOTO statement genuinely useful you need to be able to choose which line to go to depending on what data you have. This is where the IF statement comes in.

Testing a condition and taking some action depending on the test is at the heart of programming. Here's an extension of the first program with two improvements: it asks whether each price is VAT inclusive or exclusive, and also provides a neater way out than pressing the [STOP] key:

```
10 total=0
20 INPUT "What is the number to add on";number
30 IF number=0 THEN END
40 INPUT "Do you want to add on VAT (y/n)";vat$
50 IF vat$="y" THEN number=number*1.15
60 total=total+number
70 PRINT "Total so far is";total
80 GOTO 20
```

```
run
What is the number to add on? 100
Do you want to add on VAT (y/n)? y
Total so far is 115
What is the number to add on? 9.95
Do you want to add on VAT (y/n)? y
Total so far is 126.4425
What is the number to add on? 0
Ok
```

▲ Running the second version of the number adder program

The first change is in line 30. If the user enters zero as the next number to be added on, the program takes that as meaning it ought to finish. Line 40 asks the user to type 'y' or 'n' to add on VAT or not, and it stores what the user typed in the variable 'vat$'. In line 50, the contents of 'vat$' is looked at, and if the user had typed 'y' then 'number' is multiplied by 1.15, which is the way of adding 15%. After this the program loops as before until you enter zero as the next number.

As you can see, the IF statement is fairly straightforward. In the simplest case, it takes the form IF *some condition is true* THEN *take some action*. When BASIC gets to a line with an IF statement it looks at the condition between the IF and THEN keywords, and if it is true it runs everything after the THEN, otherwise it ignores it and goes on to the next line.

A child could do it

Here's a listing to play the favourite children's game of guessing a number. You think of a number between 1 and 100 inclusive, and the PCW will guess your number. It always starts at 50 – the halfway point – and you have to type 'h', 'l' or 's' for higher, lower or same after each guess.

```
10 PRINT "Think of a number between 1 and 100."
20 INPUT "Press [RETURN] to start",z$
30 lowest%=0: highest%=100: guess%=50
40 PRINT "I guess";guess%
50 INPUT "Is your number higher, lower or the
same (h/l/s)";answer$
60 IF answer$="h" THEN lowest%=guess%:
guess%=(highest%+guess%)/2: GOTO 40
70 IF answer$="l" THEN highest%=guess%:
guess%=(lowest%+guess%)/2: GOTO 40
80 IF answer$="s" THEN PRINT "Whoopee!" ELSE
GOTO 50
```

Two variables called 'lowest%' and 'highest%' keep a running check on the lowest and highest the chosen number can be, depending on the user typing h, l or s. New guesses are made in the middle of the allowed band, and after a few goes, you've converged on the real answer.

You'll notice that on several occasions more than one BASIC command has been squeezed on to the line with a

What's the condition?

A 'condition' as used in an IF statement is usually a check on the contents of a variable. There are six ways of testing in BASIC which use these special symbols:

=	'is equal to'
<>	'is not equal to'
<	'is less than'
<=	'is less than or equal to'
>	'is greater than'
>=	'is greater than or equal to'

With numbers and number variables, it's fairly obvious: if the variable 'number' holds, say, 5 then the tests number=5, number<=5 and number>=5 are true, but number<5, number<5 and number>5 are false.

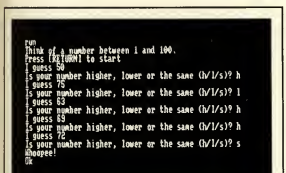
With strings, things get a bit more complex. When you compare two strings it is fairly clear if one string is 'equal to', ie. the same as, another or not, but BASIC also has certain conventions about when one string is 'greater than' another. The rule is that all digits are less than letters, and upper case letters are less than lower case letters. Within these categories numerical and alphabetical order prevails, so "0" is less than "9", "A" is less than "Z" and "a" is less than "z". For example (remembering strings are always enclosed in double quotes):

"z" is greater than "a"
"Z" is less than "a" because it is in upper case
"fred" is greater than "FRED"
"fred0" is less than "fred1" because "0" is less than "1"
"fred" is less than "frederick" because it is shorter, everything else being equal.

colon as a separator. This is useful partly as a space saver (line 30 would have taken up three different lines normally) but mainly because IF statements must be all on one line. For instance, on line 60 there are three different commands after the THEN. All of them are run if and only if the condition in the IF statement is true.

The most interesting thing is sneaked into line 80, where the IF statement has an ELSE bit tacked on. This is the full form of IF which can often be useful. If the condition you are testing is false then normally BASIC immediately looks at the next line of the program. However, if there is an ELSE on the line BASIC runs the commands after that. In this case, having tested in lines 60 and 70 whether the user had typed 'h' or 'l' for higher or lower, only two possibilities remain – either the number is the same, if the user typed 's', or the user typed something other than h, l or s in which case the program doesn't know what to do and just goes back to ask the question again.

You can use the trick of squeezing in many statements separated by colons to make IF statements do an awful lot. IF *condition* THEN *one*:*two*:*three* ELSE *four*:*five*:*six* means



▲ The POW unerringly homing in on your secret number – 72.

that statements one, two and three are run if the condition is true, and statements four, five and six if it is false.

Finally, you will notice that all the number variables used in this program have a % sign after them, which as was explained last month means they can only hold integers. This is to force all guesses to be whole numbers so you don't get things like 'I guess 14.625' appearing.

Recipe for success

Back in the first article in this series, we drew the analogy between a kitchen recipe and a program. In a recipe book, you often find instructions like, "Now make half a pint of Bechamel sauce as described on page 960." In other words, the author has written down once only the way to make the sauce, and expects you to refer to that no matter what particular recipe you are making.

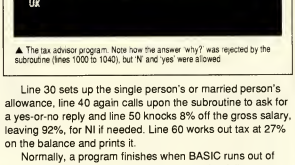
Programs have a similar feature called 'subroutines': you can write down a few lines of program to do a particular chore which you will probably want to do on more than one occasion, and tell your program to refer to that from different places. The two BASIC commands you need to control subroutines are 'GOSUB' and 'RETURN'. Here's a program showing how a subroutine is used:

```
10 INPUT "What is your annual salary";salary
20 PRINT "Are you married";:GOSUB 1000
30 IF answer$="Y" THEN allowance=3799 ELSE
allowance=2429
40 PRINT "Do you pay national insurance";:GOSUB
1000
50 IF answer$="Y" THEN salary=salary*0.92
60 tax=(salary-allowance)*0.27
70 PRINT "You are being taxed roughly £";tax
80 END
1000 REM Subroutine to get a yes/no answer to a
question
1010 INPUT "(Y/N)";answer$
1020 answer$=UPPER$(LEFT$(answer$,1))
1030 IF answer$<>"Y" AND answer$<>"N" THEN PRINT
"Please reply Y or N:";: GOTO 1010
1040 RETURN
```

This program works out how much income tax you pay a year (highly inaccurately – a proper version would be 50 times the size because of the complexity of the tax laws!). The program assumes you are in the basic 27% tax bracket, and also that if you pay National Insurance it is 8% of your gross salary. When you run it, it asks you a series of questions and then works out your tax.

Consider what happens as the program runs: line 10 asks you to type in your basic salary. Line 20 prints the text of a yes/no question on the screen, then does a 'GOSUB 1000' (for GOto SUBroutine at line 1000). BASIC now jumps to line 1000 and carries on executing program lines from there, until it comes across the 'RETURN' statement in line 1040 when it jumps back to the point in the main program immediately following the GOSUB, ie line 30.

The subroutine itself assumes that before it was called a question was printed on the screen, so it just prints '(Y/N)' as a reminder of the expected response and stores the answer in a string variable called 'answer$'. Line 120 takes the upper case version of the leftmost character typed (see last month's box on string handling commands) – this is so that whether the user types 'Y', 'y', 'YES' or 'yup' all become 'Y' and can be easily checked. After a GOSUB 1000, the main program can be sure that the variable answer$ contains either Y or N, nothing else.



▲ The tax advisor program. Note how the answer 'why?' was rejected by the subroutine (lines 1000 to 1040), but 'N' and 'yes' were allowed.

Line 30 sets up the single person's or married person's allowance, line 40 again calls upon the subroutine to ask for a yes-or-no reply and line 50 knocks 8% off the gross salary, leaving 92%, for NI if needed. Line 60 works out tax at 27% on the balance and prints it.

Normally, a program finishes when BASIC runs out of lines to run. However, because the subroutine follows on from the main program line 80 is needed: 'END' makes BASIC stop. Incidentally, there's nothing significant about the subroutine line starting at 1000, it's just to distinguish it when LISTed from the main program. The 'REM' (for REMark) statement on line 1000 is a label to remind you as you read the listing what the following lines do.

Using this subroutine has saved a few lines of typing. You can see that if this tax program asked the many hundreds of questions it ought to, the subroutine would be used from many places. You can have any number of subroutines you like in a program, and subroutines can call other subroutines. In this way, you can build up a collection of useful routines which you regularly use in all your programs. EXIT

Tracing paper

If you're confused about how subroutines work, type in the tax program but before you run it type TRON [RETURN]. This stands for TRacing ON. As the program runs, BASIC prints out the line number of each line it gets to – you'll see it going 10, 20, 1000, 1010 (pause for question reply), 1020, 1030, 1040, 30, 40, 1000 etc. TROFF turns tracing off.

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MEXED BLESSINGS

Adrian Wilkins transfers some information about MEX, the public domain communications program

By a sheer freak of coincidence, this month's addition to the ever-growing Public Domain toolkit happens to be a PD communications product, in harmony with this month's cover feature.

The program in question is called MEX, or Modem EXecutive to give it its full name. MEX has a huge range of facilities built into it, as many as the commercially available products reviewed elsewhere: it supports all common baud rates up to 9600, including the split speed (1200/75 and 75/1200) options; an in-built phone library which you can tailor yourself; optional Hayes modem control; recording data to disc or printer; and the ability to "clone" itself to create a saved version of the program with different settings to the default. One aspect that is lacking is a 'Viewdata' mode, so if access to Prestel or Micronet is a firm requirement then go for one of the proprietory packages.

Three for one deal

There are dozens of different versions of MEX around, but luckily there is one specifically tailored for the PCW. Incidentally the disc it comes on also includes two other comms programs, UKM7 (a more primitive precursor to MEX) and KERMIT. The program you are interested in is to be found under the name MEX-PCW.COM which can be renamed to MEX.COM for convenience. If you have a Hayes-compatible modem you will want to add the autodialling commands, which you do by adding 'hex overlays' to the raw MEX as follows: at the A> prompt and with the MEX disc in the drive type

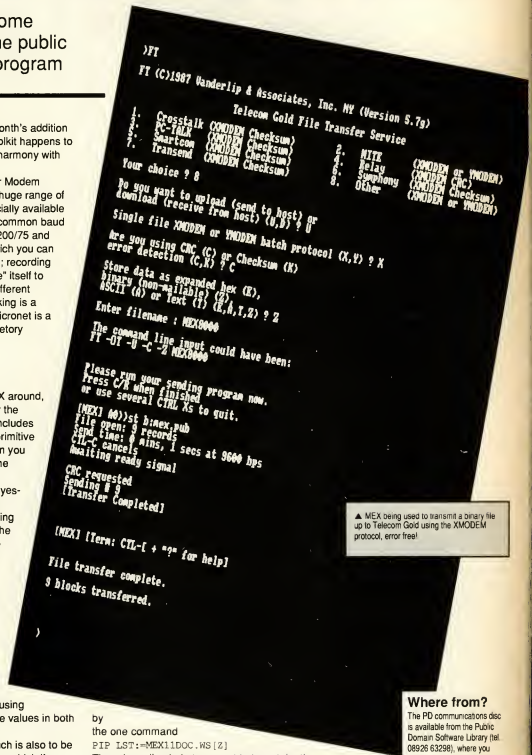
```
MLOAD MEX.COM=MEX-PCW.COM,MXO-
PCW.HEX,MXO-SM14.HEX
```

(The MLOAD program is also distributed on the disc supplied.) MEX assumes you are using Xon/Xoff protocol to communicate with your modem – if you have an intelligent modem that uses hardware handshaking instead (the Astracom modem mentioned in the main communications feature is one example) then there is a further alteration to be done: patch the final MEX.COM program using CP/M's standard SID command to change the values in both locations 014F and 0152 from 04 to 24.

MEX has a superb documentation set which is also to be found on the disc in the file MEX11DOC.WQ – which if you remember last month's PD page means it is a 'squashed' version of a WordStar text file. Use NSWP to unsqueeze it. Since almost no-one uses WordStar on the PCW you can remove the special WordStar control codes and print the file by the one command

```
PIP LST:=MEX11DOC.WS[Z]
```

There is on-line help too, provided you take the trouble to unsqueeze the help text file MEX.HQP. Overall, MEX is one of the best supported and documented PD programs, and in many cases does a lot more than its commercial counterparts. Definitely worth getting hold of. EXIT



▲ MEX being used to transmit a binary file up to Telecom Gold using the XMODEM protocol, error free!

Where from?

The PD communications disc is available from the Public Domain Software Library (tel. 08926 63298), where you should ask for 'CPM8BUK volume 61'. The same disc is also sold by Advantage (0242 222307) for £7 without any requirement to pay club membership fees.

LISTINGS

Four pages of BASIC programs to make your PCW do things you never dreamed of

Font Definer

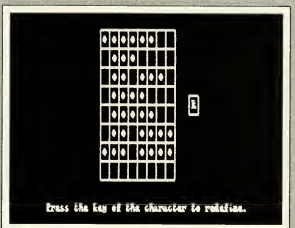
by D Atkin

Calling all amateur font designers – here is your chance to compete with the professionals. This program allows you to define, save and load new character screen sets on your PCW. This means that when you are bored with the tedious old standard font that always appears on screen, you just load in a fancy modern face or a traditional hand-writing font – all to your own design.

Listings Plus readers seem to have a fascination for font design. Inspired by the handwriting font program we printed in issue 15 (December), several readers have sent in font designing programs of amazing sophistication. This one gives you all the basics in only 63 lines, and anyone really wanting to add the fancy touches can do that themselves.

The idea is that when you choose to define a letter the program shows you an eight by eight grid. You then press the key for the letter you want to redefine and the letter is picked out using a diamond shape to show the pixels that are on (the pixels are the tiny dots that can be switched on or off to create the shape of the characters). You can redefine any of the characters that you can see on the screen, including any funny ones you normally get by pressing [EXTRA] or [ALT] and a key.

Once you load the character set (see later on) all programs you run will use that set to display their screen output in until you change the font or reset the machine.



All you have to do is...

Just move the cursor round the grid switching the pixels on or off by pressing [ENTER]. The character in its correct size is shown at the side to let you see how your changes are working. When you are pleased with it just press [EXIT] and the letter will be changed immediately. It will ask if you want to redefine another character.

Once you have redefined all the letters you want, just take option 1 from the menu and the newly defined character set will be saved in a file under the name you choose. Then any time you want to load this particular set all you need do is run the program and take the load option. Just enter the name of the font you want when prompted.

How to type in a listing

Load up Mallard BASIC – at CP/M's A> prompt, put the CP/M master disc in and type `BASIC` [RETURN].

Now you see the 'Ok' prompt. Just type in the lines of the listing exactly as they are printed on the page, including the line number at the start, but *not* the check number at the extreme right. They are for use with the 8000 Plus listing checker program, as described elsewhere on these pages. Type `LIST` at any time to print your typing so far out to the screen. If you want a hard copy to pore over, `LLIST` sends your listing to the printer.

Mistakes made before you press [RETURN] can be corrected with the [DEL] keys, otherwise you will have to use the 'line editor'. Suppose you have made a typing error in line 100: type `EDIT 100` and then you can use the cursor keys and [DEL] keys to correct it. Press [RETURN] when the line is alright. To delete a whole line, type just its line number and [RETURN].

When you've finished, save the program to a disc by the command `SAVE "FRED"` (choose your own appropriate file name instead of FRED). To run the program, type `RUN`.

Programs rarely run first time, but when BASIC encounters a mistake it tells you roughly what line the error is on. 'Syntax Error' means a typing mistake on that line, other error messages may be knock-on effects of an earlier error. Use the EDIT command to correct it.

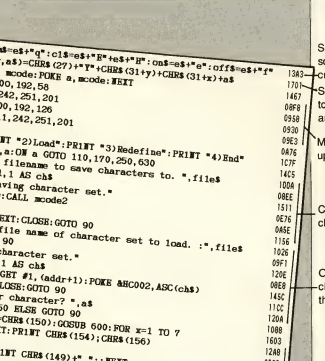
You can rerun the program another day by loading BASIC up and, with the disc you saved the program on in the drive, typing `LOAD "FRED"` then `RUN`.

It is surprising how many different fonts you can produce in a small eight by eight grid and of course you don't need to stick just to letters. You can use the grid to design your own symbols and designs. Hours of fun.

One disadvantage is that the fancy fonts you design can only be used on the screen, not the printer (except for 8000 series owners, if they do a screen dump – [EXTRA]+[PTR]), but you can't have everything. Once a new font is loaded it will stay with you until you load a new one or restart the machine.

A handy tip, the first time you use the program, is to save the standard PCW font unchanged (just pick the save option – No 1 – and save under the name 'Normal' or something easy to remember). Then when you find that the fancy new font you have defined is giving you a headache you can just load the 'Normal' set and you are back to something readable.

With a little ingenuity you could write a program which loaded a new character set, used the new characters in a fancy screen display program, and restored the old set before it exited.




```
10 a$=CHR$(27):rev$=a$+"p":nrm$=a$+"q":cl$=a$+"E"+a$+"H":on$=a$+"e":off$=a$+"f"
20 MEMORY &HBFFF:DEF FNat$(x,y,a$)=CHR$(27)+"Y"+CHR$(31+y)+CHR$(31+x)+a$
30 FOR a=&HC003 TO &HC027:READ mode:POKE a,mode:NEXT
40 DATA 243,62,130,211,242,42,00,192,58
50 DATA 02,192,119,62,134,211,242,42,00,192,58
60 DATA 243,62,130,211,242,42,00,192,126
70 DATA 33,02,192,119,62,134,211,242,251,201
80 mode1=&HC003:mode2=&HC015
90 PRINT cl$:PRINT "1)Save":PRINT "2)Load":PRINT "3)Redefine":PRINT "4)End"
100 PRINT:INPUT"Enter choice :",a:ON a GOTO 110,170,250,630
110 PRINT cl$:PRINT:INPUT"Enter filename to save characters to. ",file$
120 OPEN "R",#1,file$,1:FIELD #1,1 AS ch$
130 PRINT:PRINT "Please wait. Saving character set."
140 FOR addr=0 TO 2048:GOSUB 610:CALL mode2
150 LSET CH$=CHR$(PEEK(&HC002))
160 PUT #1,(addr+1):PRINT ".";:NEXT:CLOSE:GOTO 90
170 PRINT cl$:PRINT:INPUT"Enter file name of character set to load. :",file$
180 IF FILES(file$)="" THEN GOTO 90
190 PRINT "Please wait, loading character set."
200 OPEN "R",#1,file$,1:FIELD #1,1 AS ch$
210 FOR addr=0 TO 2048:GOSUB 610:GET #1,(addr+1):POKE &HC002,ASC(ch$)
220 CALL mode1:PRINT ".";:NEXT:CLOSE:GOTO 90
230 PRINT cl$:INPUT"Define another character? ",a$
240 IF UPPER$(a$)="Y" THEN GOTO 250 ELSE GOTO 90
250 stop$="":PRINT cl$;x=1:y=1:a$=CHR$(150):GOSUB 600:FOR x=1 TO 7
260 PRINT CHR$(154)+CHR$(158);:NEXT:PRINT CHR$(154);CHR$(156)
270 FOR y=1 TO 7
280 PRINT TAB(21);:FOR i=1 TO 9:PRINT CHR$(149);" ";:NEXT
290 PRINT TAB(21);:PRINT CHR$(151);:FOR i= 1 TO 7:PRINT CHR$(154);
300 PRINT CHR$(159);:NEXT:PRINT CHR$(154);CHR$(157):NEXT
310 PRINT TAB(21);:FOR i=1 TO 9:PRINT CHR$(149);" ";:NEXT
320 PRINT TAB(21);:PRINT CHR$(147);:FOR i=1 TO 7:PRINT CHR$(154);CHR$(155);:NEXT
330 PRINT CHR$(154);CHR$(153)
340 x=20:y=8:a$=CHR$(150):GOSUB 600:PRINT CHR$(154);CHR$(156)
350 x=20:y=9:a$=CHR$(149)+" "+CHR$(149):GOSUB 600
360 x=20:y=10:a$=CHR$(147)+CHR$(154)+CHR$(153):GOSUB 600
370 y=20:x= 10:a$="Press the key of the character to redefine.":GOSUB 600
380 char$=INKEY$:IF char$="" THEN GOTO 380
390 FOR i = 0 TO 7:addr=(ASC(char$)*8)+i:GOSUB 610
400 CALL mcode2:a(i)=PEEK(&HC002):NEXT
410 FOR j =0 TO 7:i=256:FOR k=0 TO 7:i=i/2
420 IF a(j)/i >=1 THEN a(j)=a(j)-i:a$(j,k)=CHR$(188) ELSE a$(j,k)=" "
430 y=((j#2)+2):x=(ik2)+2:a$=a$(j,k):GOSUB 600:NEXT:NEXT
440 PRINT off$:a=0:b=0:WHILE stop$=""
450 x=21:y=9:a$=char$:GOSUB 600
460 mov$=INKEY$:x=(b#2)+2:y=(a#2)+2:a$=rev$+a$(a,b):GOSUB 600
470 a$=nrm$+a$(a,b)
480 IF mov$=CHR$(31) AND a>0 THEN a=a-1
490 IF mov$=CHR$(30) AND a<7 THEN a=a+1
500 IF mov$=CHR$(1) AND b>0 THEN b=b-1
510 IF mov$=CHR$(6) AND b<7 THEN b=b+1
520 IF mov$=CHR$(13) AND a$(a,b)=CHR$(188) THEN a$(a,b)=" ":GOTO 540
530 IF mov$=CHR$(13) AND a$(a,b)=" " THEN a$(a,b)=CHR$(188)
540 i=256:ch=0:FOR z=0 TO 7:i=i/2
550 IF a$(a,z)=CHR$(188) THEN ch=ch+i
560 NEXT:POKE &HC002,ch
570 addr=(ASC(char$)*8)+a:GOSUB 610:CALL mcode1
580 GOSUB 600:IF mov$=CHR$(27) THEN stop$="stop"
590 WEND:GOTO 230
600 PRINT FNat$(x#20,y+5,a$);:RETURN
610 POKE &HC000,(addr MOD &H100)
620 POKE &HC001,(((addr-(addr MOD 256))/&H100)+&HB8):RETURN
630 PRINT cn$;:nrm$:END
```

1383 Setting up reverse screen, clear screen and cursor off

170 Setting up FN statement to allow text to be placed anywhere on the screen

930 Machine code for setting up character set.

Create a file and save a character set to it

Open a file with a character set and poke in the information

Set up grid. The FN statement to place the elements on screen is in GOSUB 600 using the variables x and y

Showing the chosen letter on the grid. CHR$(188) is the diamond shape used to show a pixel on

Use INKEY$ to move the cursor

Moving the cursor round the grid

Switching individual pixels on and off

Changing an individual letter

Placing elements on screen

PCW Music

by C.A. Berry

And you thought all that the PCW could do was make that annoying bleeping sound, yet here's a listing to produce melodious harmonies. Well, to be totally accurate it produces that annoying bleeping sound at different pitches to give a reasonable representation of music, but it is still really impressive.

```
10 REMKEY HSCB00-1
20 DIN tval%(25),cpc%(25)
30 FOR i=0 TO 24
40 READ tval%(i),cpc%(i)
50 NEXT
60 DATA 3324,131,3132,139,2961,147,2769,156,2636,165,2465,175,2330,185,2227,196
70 DATA 2096,208,1994,220,1863,233,1779,247,1655,262,1584,277,1473,294,1391,311
80 DATA 1311,330,1258,349,1167,370,1101,392,1039,415,979,440,924,466,877,493,819,524
90 GOSUB 410
100 RESTORE 170
110 PRINT: PRINT "The two octaven ....."
120 FOR note=0 TO 24
130 READ note,duration
140 t%=tval%(note): c%=cpc%(note)/8 * duration
150 CALL pound(t%,c%)
160 NEXT
170 DATA 0,4,2,1,4,1,5,1,7,1,9,1,11,1,12,4,14,1,16,1,17,1,19,1,21,1,23,1,24,4
180 FOR pause=0 TO 500: NEXT 'tune4'....': PRINT
190 PRINT: PRINT "Now, using 'tune4'....": PRINT
200 PRINT "Rule Britannia!": PRINT
210 FOR repeats=0 TO 1
220 tune4=%QE8EB3F3FB3E3F4E1B3D1C3B9E3DGF5E1DLE1F1G3F3E6D6C1C9"
230 GOSUB 260
240 NEXT
250 END
260 p=0:WHILE pCLEN(tune4)
270 nk=MID$(tune4,p+1,1)
280 IF nk="E" THEN p=p+1: oct=VAL(MID$(tune4,p+1,1)): GOTO 380
290 IF nk="G" THEN p=p+1: oct=VAL(MID$(tune4,p+1,1)): GOTO 380
300 IF nk="D" THEN t=1,"D_SF_G A_BCF_dA"-1
310 note=INSTR(t,"D_SF_G A_BCF_dA")-1
320 IF oct=2 THEN note=note+12
330 IF MID$(tune4,p+2,1)="#" THEN note=note+1: p=p+1
340 p=p+1
350 IF MID$(tune4,p+1,1))
360 duration=VAL(MID$(tune4,p+1,1))
370 t%=tval%(note) : c%=cpc%(note)/10 * duration
380 CALL pound(t%,c%)
390 p=p+1
400 WEND
410 RESTORE 540
420 address=&HCB00
430 FOR i=1 TO 12
440 READ mcode$,check$
450 num=0: FOR z=1 TO 21 STEP 2
460 FOR j=1 TO 21 STEP 2
470 byte=VAL("&H"+MID$(mcode$,z,2))
480 POKE address,byte
490 num=num+byte: address=address+1
500 NEXT
510 NEXT
520 pound=&HCB00
530 RETURN
540 DATA 65d5c5ede54a6246e2b623,664
550 DATA 506960c413cb3e0c83f8dd,5c4
560 DATA 5069b0c413cb3e0c83d5d4,794
570 DATA 1c1d1c1c5f3f3dcb3dc3d4,443
580 DATA a1c1d1c1cf3f3d0dd3133cbdd,4a3
590 DATA 2fe6034f0809dd0133cbdd,15c
600 DATA 2fe6034f0809dd0e0d20f2d,210
610 DATA 093e9e0000940e0d20f23d,310
620 DATA 0e3f0f20f23cfe0d20f23d,4fa
630 DATA 3dd3f8441fe0d20f23d09,4f7
640 DATA 3dd3f8441fe0d94d0ddee9,4f7
650 DATA 3dd3f8441fe0d94d0ddee94,5c2
660 DATA 2f09f9441fe0d94d0ddee94,528
670 DATA 2f09f9441fe0d94d0ddee94,528
680 DATA 2f09f9441fe0d94d0ddee94,528
690 DATA 2f09f9441fe0d94d0ddee94,528
700 DATA 2f09f9441fe0d94d0ddee94,528
710 DATA 2f09f9441fe0d94d0ddee94,528
720 DATA 2f09f9441fe0d94d0ddee94,528
730 DATA 2f09f9441fe0d94d0ddee94,528
740 DATA 2f09f9441fe0d94d0ddee94,528
750 DATA 2f09f9441fe0d94d0ddee94,528
760 DATA 2f09f9441fe0d94d0ddee94,528
770 DATA 2f09f9441fe0d94d0ddee94,528
780 DATA 2f09f9441fe0d94d0ddee94,528
790 DATA 2f09f9441fe0d94d0ddee94,528
800 DATA 2f09f9441fe0d94d0ddee94,528
810 DATA 2f09f9441fe0d94d0ddee94,528
820 DATA 2f09f9441fe0d94d0ddee94,528
830 DATA 2f09f9441fe0d94d0ddee94,528
840 DATA 2f09f9441fe0d94d0ddee94,528
850 DATA 2f09f9441fe0d94d0ddee94,528
```

The PCW's beeper is a 'piezo sounder', and what this program does is turn it on and off at a specific frequency – a rather imprecise way to generate a specific note. Those users with perfect pitch may want to experiment with modifying DATA lines 60 to 90 to get the tuning just right for their own PCW (in fact users with perfect pitch would be best advised not bothering with this program at all – or else face hours of audio mutiliation!).

The program gives two methods of producing music. The first is seen in line Line 150, `CALL psound`, where the first variable is the note and the second is the duration (this is made slightly more complicated by the way the piezo sounder behaves so it may be best to experiment.) The data in line 170 sets the sounder up to generate you two octaves in an ascending scale.

Probably more useful is the variable `tune$` (line 220) which as it gives you the tune 'Rule Britannia'. With a little patience and imagination you could easily knock up a Bach fugue.

Setting up a tune

Tunes are written as a series of pairs of letters and numbers. You put the note first (A,B,C,D,E,F or G – only use upper case letters) and the duration of the note second (an integer from 1 to 9). Using the character `b` after a note reduces it by a semitone (ie. flattens it) and using `#` sharpens the note.

The octave is chosen by inserting O1 or O2 (O1 is the lower octave) in the string and a rest is added with the letter R and a number. Rests can be joined together to give a really long rest. The only other thing to notice is that Middle C actually comes at the top end of the first octave and the D just above is in Octave 2. You can modify the range of notes if you want but this was the range found to give the best results.

Good programs needed!

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3. A stamped, addressed padded bag for its return;
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Send your listings to *Listings, 8000 Plus, 4 Queen Street, Bath BA1 1EJ.* Please allow up to 40 days for return of your disc – the listings are assessed in a batch once a month.

If you are totally delighted with 'Rule Britannia' why not try these couple of lines which give you 'Yankie Doodle Dandy':

```
tune$="O1C2C2O2D2E2O1C2O2E2D401C2C2O2D2E2O1C4
B4C2C2O2D2E2F2E2D2O1C2B2G2A2B2C4C4"
tune$="R1A3B1A2G2A2B2C4R1G3A1G2F2E4G4R1A3B1A2
G2A2B2C2A2G2C2B2O2D2O1C4C4"
```

Remember a GOSUB 440 after each, and then just sit back and be amazed.

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BASIC Checker again

by Adrian Wilkins

Newer readers may wonder what these mysterious numbers are that we put at the end of the lines. These relate to an ingenious checking program sent in by reader Adrian Wilkins to help you check that you have typed in your listing correctly. And for anyone wanting to take advantage of this invaluable service we are reprinting the listing.

What this program does is look at your listing and print out a code at the end of each line. Check this code with the code in the magazine and if they differ look closely at that line for your mistake.

Of course you have to get this program running without the benefit of this high technology. But once you have it running successfully you can use it to check any listing. The only thing you have to remember is to save your listing in ASCII form: where you would normally type `SAVE "PROG"` to save it, type `SAVE "PROG",A` instead.

Then run the Checker program. When it asks for the filename enter the name of your listing saved in ASCII form. It then prints out the listing with the numbers. Before you can make any changes to the listing you will have to load it in the normal way – `LOAD "filename"` and make your changes.

```
10 INPUT "Program name ",prog$ : IF INSTR(prog$,".") = 0 THEN prog$=prog$+".bas"
20 IF FIND$(prog$)="" THEN PRINT "Program not found" : PRINT : GOTO 10
30 LPRINT CHR$(15);CHR$(27);"W1";
40 LPRINT "Checksum listing of file ";UPPER$(prog$); " for 8000-PLUS"
50 LPRINT CHR$(27);"W0"
60 OPEN "I",1,prog$
70 WHILE NOT EOF(1)
80 LINE INPUT #1,z$
90 y$=UPPER$(z$)
100 check%=0 : j%=0
110 FOR i% = 1 TO LEN(y$)
120 y%=ASC(MID$(y$,i%,1)) : IF y%=32 GOTO 200
130 IF y% <> &HFC GOTO 180
140 PRINT "Error - Program was not saved in ASCII mode" ; PRINT
150 PRINT "Do the following...","LOAD ";CHR$(34);prog$
160 PRINT ,,"SAVE ";CHR$(34);prog$;CHR$(34);",A" : PRINT
170 PRINT "and run the checksum program again" : PRINT : GOTO 230
180 j% = j% + 1
190 check% = check% + (y%-32) * (j% MOD 7) +1
200 NEXT
210 LPRINT z$;TAB(120);HEX$(check%,4)
220 WEND
230 CLOSE 1 : LPRINT CHR$(18);CHR$(12);
240 END
```

Gremlins Corner

This month's Gremlins Corner doesn't deal so much with mistakes as with one or two suggested improvements to last month's listings.

First, a number of people contacted us with problems on the Mail Merge to do with an 'Improper Argument' error message. This is not a fault with the program, but seems to arise when one of the addresses in your address file has the wrong number of elements in it. For instance if you have told the program that there will be six elements in each address and in one address you only have five. Check that all your addresses have the right number of lines etc.

The Variable Lister has posed a few problems because the programs you have been running through it are so complicated. If you have more than 50 different variables in your program, the Lister will go wrong. This is easily fixed by changing the DIM statement in line 10. Bump the 50s in this line up to a figure greater than your greatest number of variables to solve this (for example `DIM var$(150)`).

More complicated is the fact that some programs put through the lister are producing a 'String too long' error message. This is because you've got too many occurrences of a variable (like over 50), and the variable `ln$` is getting more than 255 characters in it. Here is a suggestion from Mr J Dulton to get round this. Change line 390 to:

```
390 a$=ln$(i%):newa$=newln$(i%)
```

and then change 410 to

```
410 IF b%=0 THEN newa$=a$+newa$:GOTO 441
```

Then add

```
441 IF newa$="" THEN 450 ELSE a%=LEN(newa$):b%=INT(a%/55)
442 IF b%=0 THEN PRINT TAB(26) newa$:GOTO 450
443 c%=INSTR(50,newa$,","):IF c%=0 THEN c%=a%+1
444 PRINT TAB(26) LEFT$(newa$,c%-1):newa$=RIGHT$(newa$,a%-c%)
445 GOTO 441
```

Now alter 540 to

```
540 IF var$<>var$(j%) THEN 550
```

and add

```
542 no%(j%)=no%(j%)+1
546 IF LEN(ln$(j%))>240 THEN newln$(j%)=newln$(j%)+","+line$ ELSE ln$(j%)=ln$(j%)+","+line$
```

Other matters to clear up are the fact that of course the program only differentiates between variables and BASIC command words by the fact that it expects variables in lower case and commands in upper case. If you have a program with variables in capitals you must convert them to lower case, which is easily done with PIP. The command

```
PIP FREDL.BAS=FRED.BAS[L]
```

creates a file FREDL.BAS which is a lower case version of FRED.BAS (you must have saved FRED.BAS with the `,A` option in BASIC). You then convert the BASIC keywords back into upper case simply by LOADing and reSAVEing the program – BASIC automatically converts all the command words back into capitals, so the Variable Lister only picks up the variables.

The final point is something we omitted to mention. The Lister expects the first line of your program to be a REM line which it prints at the top of the page to help you keep track of which program is being listed. If you have any variables in this line they will be ignored.

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The software for the 8512 series WB has been completely rewritten in consultation with Locomotive Software and therefore has no restrictions with regard to CP/M and LOCOSCRIPT. The partitioning software provided with the WB works with both systems and allows you to partition the work in any of the following ways.

1) 1 drive of 2Mbytes/user as C:
2) 2 drives of 2Mbytes/user as C: & D:
3) 1 drive of 1Mbyte & 1 drive of 2 Mbytes/user as C: & D:
4) 1 drive of 1Mbyte & 2 drives of 2 Mbytes/user as C: D: & E:
5) 4 drives of 2 Mbytes/user each as C: D: E: & F:

The WB is supplied with the following software:
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DRIVE CAPACITY AND PERFORMANCE
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Average:	75 msec
Maximum:	120 msec
Average latency:	8.33 msec
Start up time	8 sec typ; 15 sec
	Functional
Rotational speed:	3600 rpm
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Amstrad Professional Computing Nov/Dec 1986
The review said: "Overall, I was very impressed at the simplicity of setting up the drive and speed of operation of the drive. Certainly a worthwhile investment for anyone who uses their Joyce regularly. If I can't steal the review model I shall probably buy one myself."

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TIP-OFFS

Arguments about Post Office delivering 8000 Plus's valuable advice for PCW owners (3,4)

Puzzled by LocoScript? Haven't a clue in Mini Office? Is reading the manual resulting in cross words? Well here's the answer: Tip Offs... If you've found a smart answer to a fiendish problem, tell us at *TipOffs, 8000 Plus, 4 Queen St, Bath BA1 1EJ.* £30 goes to the neatest correct solutions every month. April's winners are J. Worsley of Plymouth, who's answered the continuous printing riddle in Mini Office's database, and Tom Brightmore of Chipping Campden, Gloucester, for his method of saving on printing tab.

Transfer market

8256 owners who've just bought a 9512 probably don't spend too much time reading the manual. After all, it works in much the same way. However, there are a couple of new commands, one of which is extremely useful for copying 8256 discs to 9512 discs which you can write to.

The command in question is 8000COPY. Make sure you have the CP/M master disc in the drive, or at least have the file 8000COPY.COM on your work disc, and type `8000COPY` [RETURN]. By following the prompts you can copy any number of 8256 discs onto a 9512 disc, space permitting.

You need to format a 9512 disc first of all, and make sure that there are no files on the M drive (8000COPY deletes them all to create some workspace for itself). 8000COPY asks you whether you want the new disc to be 'bootable', and if you reply yes it will prompt you for the correct discs to copy the J21CPM3.EMS file onto your 9512 disc so that it acts as a start of day disc. It also asks you whether there are any LocoScript files on the disc, which it copies in a special way.

Join the singles club

One snag with the otherwise excellent Mini Office Professional is that it won't do printouts from the database on single sheets of paper. When you call for a printout it continues to print onto the roller after the first sheet has run out and is very difficult to stop! The database is tailored to expect continuous stationery, but many database users use single sheets of A4 paper.

One answer is to press [PTR] early on in the printout and change the 'Paper out defeat' to OFF down on the status line. A better solution though is as follows.

You need PAPER.COM on your startup disc, and at the A> prompt type: `PAPER A4 PAPER OUT DEFEAT[OFF] DEFAULT` [RETURN] or just `PAPER A4 P[OFF] D` [RETURN]. The PCW confirms the new settings.

You can include this on your startup disc in your PROFILE.SUB file if you wish and then it'll be done automatically.

Now type `OFFICE` and run your database as normal. When you call for a printout the printer will stop when you run out of paper, not only avoiding that messy printing on the roller, but preventing loss of information too!

J Worsley
Plymouth, Devon

```
CP/M Plus  Amstrad Consumer Electronics plc
v 1.4, 61K TPA, 2 disc drives, 366K drive M:

A)PAPER A4 P[OFF] D
Single Sheet
Paper Out Defeat Off
Line Pitch   6 (lines per inch)
Form Length 70 (lines)
Gap Length   3 (lines)
Defaults set

A)OFFICE
```

Changing your daisies

If you use LocoScript 2.12 with a daisywheel printer or typewriter which has a 'deselect' or 'offline' button, and have bought the Character sets disc from Locomotive, there is an easy way to make the printing stop at a certain point while you change over to another daisy – to select italics for instance.

To pause printing, first find the 'deselect' (offline) code from the printer or interface manual – for the Brother IF-50 interface, for example, this is `&13`. Now assign this, together with a 'space' code, to the LocoScript accent 'breve' in the character set file:

`"!'&13'!SP'" "BREVE"`

(The keystrokes for breve are [EXTRA]-S, which is easy to remember for stopping the printer, and being an accent, doesn't affect line length for justified text etc. However, Loco will backspace as it would to overprint the accent, hence the extra space – 'SP')

During editing, put a breve on top of the first character to be printed in the different daisy. The printer will stop before this character is printed; printing can be continued after changing the print wheel by pressing the 'select' or equivalent button on the interface.

Andrew Barnett
Oxford

Keep it clean

If your 8000 series printer head is becoming clogged (some of the pins aren't firing properly, resulting in stripes across your page), the easiest way to clean your print head, without disassembling the printer, is as follows. On a sheet of thick, absorbent A4 paper, spray stripes of WD40 down the page, leaving about a two inch gap between each. Select a short text, say one page, and – removing the print ribbon – print it out several times. The head will pick up the WD40 on the stripes and deposit its dirt on the clean 'bands' as it goes along. After a few runs the head will be perfectly clean. It's easy to do, cheap, and works on the dirtiest print heads!

Dr T Dukes
East Dereham, Norfolk

Full tilt

Tilting the keyboard of your PCW makes typing more comfortable. An easy way to do this is to tape a plastic A4 size binding spine, cost 20p from any stationers, between the back rubber feet. The keyboard is tilted and the front rubber feet prevent sliding.

Lawrence Kelly
Chorley, Lancashire

Printer output catcher

Very often a listing, such CALENDAR.BAS on the last 8000 Plus Subscribers' Disc, outputs its results to the printer, but it would be nice to get the results sent to a file. With the calendar, for example, you could use LocoScript to smarten the calendar up with bolds, new pitch sizes etc.

You can do this by using the CP/M file PUT.COM (to be found on side three of the 8000 series master discs). Run CP/M as usual, and at the A> prompt insert the PUT.COM disc and type `PUT PRINTER OUTPUT TO FILE M:CALENDAR.88` (use any file name you like in place of CALENDAR.88). Remove the disc and run CALENDAR.BAS as normal. The program will run, but not produce any printed output. When it's finished replace your PUT.COM disc and turn normal printer output back on by the command `PUT PRINTER OUTPUT TO PRINTER`.

Looking at the M drive by `DIR M:` should show that a new file CALENDAR.88 has been created; now, if you want to insert it into a document or just polish it up with LocoScript, you can. Make sure you copy the file onto a proper floppy disc from the M drive (make sure PIP.COM is on your disc then type `PIP A:=M:CALENDAR.88`), then just run up Loco, open a new document and insert text ([f1] in Loco 2, [f7] in Loco1) giving the file to insert as CALENDAR.88, of course.

What is happening is that all text that would be sent to the printer is being intercepted and stored in a file instead. By running the program for 1986 to 1990 say, you can create a file CALENDAR.TMP and insert this into a LocoScript document CALENDAR as above and use as a reference when you're writing your letters.

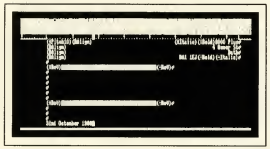
If you're really ambitious you could apply this technique to make an appointments diary, or files for use in spreadsheet projections, etc etc...

Emma Cooper
Wembley, Middlesex

A window on the world

The use of banker envelopes greatly speeds up letter writing. They're the envelopes with the plastic window to let you see the address on the letterhead.

It can be a fiddle to show where the address can be written, and putting in guide symbols on the template makes it look untidy. A solution is to show the area within which the address can be typed by using two lines that appear as reverse video on the template so that you can see where to start, and how far across you can go.



Locoscript's [+]RV codes have no effect on printed output at all.



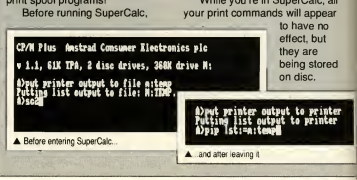
On A4 paper using 10 pitch with 1" margins, the window is 37 spaces long; in 12 pitch, 44 spaces long. The first reverse video line goes on line 6 of the document (assuming you are using a standard top gap of 6 lines), the next at 13. Put a (+RV) code at the

DIY printer spooling

There is a simple answer to A Yaffy's problem (PostScript, Feb 1988) of storing up a number of SuperCalc worksheets during a session and then printing them out all together afterwards, without needing to buy expensive print spool programs!

Before running SuperCalc, and with a disc containing PUT.COM in the A drive, type `PUT PRINTER OUTPUT TO FILE M:TEMP`. This temporarily intercepts all printer output and stores it in a file TEMP on the M drive.

While you're in SuperCalc, all your print commands will appear to have no effect, but they are being stored on disc.



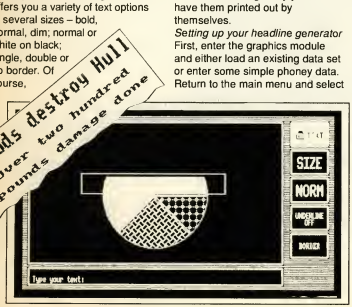
▲ Before entering SuperCalc...

▲ ...and after leaving it

Make the headlines

Frustrated by the lack of large text sizes in LocoScript? Mini Office owners can use the graphics package as a headline generator. It offers you a variety of text options in several sizes – bold, normal, dim; normal or white on black; single, double or no border. Of course, they're intended for use labelling your pie-charts and graphs produced by the graphics module, but with a little ingenuity you can have them printed out by themselves.

Setting up your headline generator
First, enter the graphics module and either load an existing data set or enter some simple phoney data. Return to the main menu and select 'pie chart'. From the options, choose your phoney data set and set the 'key' option to off. Then [EXIT] from the Options and select the top symbol which means 'draw pie chart'.



Having produced your spurious pie chart (with no key cluttering the right of the screen) you now need to erase it! From the text options, select the largest size and no border. Select the text icon and you will be asked to 'Type your Text'. Keep pressing the space bar till you hear a bleep. Press [ENTER], and the empty floating text box appears. Use the cursor keys (alone for fine movement, with [SHIFT] for coarse movement) to move the box exactly over the top of the pie chart.

Now press [ENTER] and your 'text' – a row of blank spaces – erases part of the pie chart! Repeat this about eight times, and you will have a completely blank screen. From the 'TV' options, select 'Save to disc'. BLANKSCR.EEN seems an appropriate name!

Now you've saved it, you need never go through all this rigmarole again.

Using the headline generator
Enter the graphics module and load a pie chart from data in a .GRA file. Then from the 'TV' options select the 'load from disc' icon and specify BLANKSCR.EEN as the title.

You can now put any text you like on the screen, in all the size and style options. There's a limitation of 20 characters to a title, but careful positioning of a continuation box gets over this. You can print your headlines small across the page, or large down the page.

Literally cutting and pasting these headlines on to a LocoScript page can give very good results when photocopied – at least until you can afford a genuine DTP package!

Gerald Ponting
Eastleigh, Southampton

Because the PCW doesn't have to wait for the slow printer to keep up with it, print commands work almost instantaneously!

After leaving SuperCalc, type:
`PUT PRINTER OUTPUT TO PRINTER` [RETURN]
`PIP LST:=M:TEMP` [RETURN]
The first line makes the printer work normally again, the second prints the stored file. (Of course then you'll need PIP on your disc too). Your worksheets will then all be printed out together.

If you want the file saved to disc, you'll have to PIP it from the M drive before turning off.
Tom Brightmore
Chipping Campden, Gloucester

Stop Press on 9512s

Some guidelines on using the excellent graphics and DTP package Stop Press on a 9512. Obviously you need a dot matrix printer to be able to print anything out!

To make a Stop Press working disc on a 9512:
a) Turn on the 9512 and insert the standard CP/M disc.
b) Format a blank disc with DISCKIT.
c) Type `8000COPY` [RETURN]. In response to 'Do you want the destination disc to be bootable' type `N` for no.
d) Follow the prompts and copy both sides of both Stop Press delivery discs onto the newly formatted disc (they'll all fit). See the PCW9512 manual for further details of 8000COPY. The file CLASSIC.FNT is on the Stop Press delivery discs twice – don't worry when 8000COPY says it's already on your 9512 disc and answer `N` to the question 'Do you want to overwrite it?'

Each time you want to run Stop Press:
a) Check that *both* your standard daisywheel and your extra dot matrix are plugged into the correct ports at the rear of the 9512.
b) Turn on the 9512 and insert the standard CP/M start-of-day disc.
c) When the A> appears, type `DEVICE LST:=PAR` [RETURN].
d) Replace the CP/M disc by the Stop Press working disc created in part A above.
e) Type `SUBMIT PROFILE` [RETURN]; Stop Press will start.
f) After loading a page, the normal Stop Press print command (M1 on the menu) will output correctly.

Troubleshooting:
If this process doesn't work, the first thing to do is to check the printer connection is working outside Stop Press. Immediately after Stage B(c) – with the CP/M disc still in the drive still – type `PIP LST:=CON:` [RETURN]. This sets up the PCW to echo everything you type to the printer. Type a few random phrases; if nothing happens, your printer connection is faulty. Check the printer's 'on line' and 'paper out' buttons if you have them. To leave this printer echoing, hold down [ALT] and press Z.

If your printer prints gibberish, or won't work even if this process is OK, check with your dealer that your printer is Epson graphics compatible; if not, you can't use it with Stop Press.

beginning of each reverse video line, type the required number of spaces, and end each line with (-RV). Though showing up reversed on screen, it has no effect on the printout.

If the date is on line 17 then you always fold the letter just under this, and the address is correctly aligned for the window. All this assumes you have nothing in the header – if you do it'll upset the spacing. For every line in the header, knock one off the line numbers quoted.

All this goes into the TEMPLATE.STD; when you come to create a letter, just put the recipient's address in the space between the reverse video bars, remembering *not* to press [RETURN] at the end of each line!
I Kernaghan
Thornton Heath, Surrey

This is an ex-file

'Exec' files are an incredibly useful feature of Protext – you make a file containing a batch of commands and can execute them by typing `X` followed by the name of the file. Perhaps the most common use is to assign phrases to keys – you might have a different set for your letters disc, your BASIC programming disc and your unpublishable novel disc.

Any file called EXFILE is automatically executed on startup, and other exec files can be invoked as above. However, the easiest thing to do is to call the phrases file on each disc EXFILE; you can then execute your phrases file when you change discs just by pressing [EXTRA]+[ENTER].
Hilary Hayes
South Harrow

Just the ticket

Printing tickets is an ideal job for LocoScript 2 and your PCW: you can use fancy characters for your borders and get a very smart result. Numbering the tickets manually is tedious – or it can be easy. The trick is to put the ticket in the header of a document with a page number inserted somewhere. In the main document, just put as many new pages as you want tickets, with no text, and you have each 'page' containing exactly one header, with the number inserted for you by the page number!

To get the print out done most effectively, proceed as follows. Let's assume you're working with 11 inch continuous paper, ie 66 lines between each line of perforations. Six eleven-line tickets will fit neatly into one page of continuous paper, thus ensuring the line of perforations doesn't cut across any of the tickets.

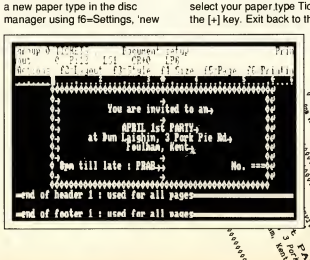
This works in both LocoScript 1 and LocoScript 2, but lets assume you're working with Loco 2: set up a new paper type in the disc manager using f6=Settings, 'new paper type'. Call it 'Tickets' with the following data: continuous stationery; height 11; left offset 10; top and bottom gap 0. Create the new paper type and write it to your SETTINGS.STD by following the prompts.

Now create a document TICKETS, go straight into header editing area ([f1], 'Document setup', header 1) and make up your design. It must have exactly 11 lines in it, including a blank one as a separator; pad it out with [RETURNS] if necessary. (If you want it longer, you have to make it 22 lines, or some other number which divides exactly into 66 – and you'll have to make this figure the height of your new paper type in the above paragraph).

Somewhere in the ticket put 'Ticket Number' and follow it by the code [+]PN and three = signs. When you've finished the ticket to your satisfaction, select f5 'Page' to set up the page details of TICKETS. First choose 'Paper types' and select your paper type Tickets with the [+] key. Exit back to the Page menu and choose Page layout this time, setting the footer, top and bottom gaps to 0, and the header to 10 (Loco won't allow you a zero-length body – but don't worry, your header is eleven lines long anyway, which overrides this bit). [ENTER] and [EXIT] suitably all the way back to the main document and type in as many new page markers as tickets you want (a new page is [ALT]+[RETURN]).

When you print out, make sure you start with the print head right against the very top of a page, just under the perforations. The above setup fits six eleven-line tickets in your 66 line sheet. Select the Print command, make sure the paper type selected is Tickets, and your numbered tickets roll out.

Of course you can extend this principle to anything which might require numbering – concert tickets, raffle tickets, invites, receipts etc., though even with the help of LocoChar LocoScript 2 can't mimic banknotes just yet!
Roger Batty
Oxford



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These pages provide a guide to the best software around for the Amstrad PCW. Published in three monthly parts, this time it's the turn of Spreadsheets, Games and Graphics to face the ultimate test. We've set out to test every piece of software we could lay our hands on, and to give you enough information to decide which program is the one you're looking for.

The selection isn't comprehensive, but the software listed here represents what we think is the best of that currently available. As well as a brief summary of what they do, there are the main Plus and Minus points for each program - Pluses have a □ by them, Minuses a ■. Those we think are particularly noteworthy have a corner flash – have fun window shopping!

SPREADSHEETS

If a database replaces an address book, then a spreadsheet replaces the back of an old envelope. It is really an electronic piece of paper which allows you to jot down numbers, juggle them around and analyse the cost benefits of a situation. Vital for businesses, spreadsheets can be useful to home users too: if you want a bank loan you will find that showing your bank manager a spreadsheet printout of your living expenses answers a lot of questions!

A typical spreadsheet has a grid of rows and columns. This grid forms a screenful of cells identified by their column and row numbers, e.g. A3, K36 etc. Each cell can contain a simple number, some text to make the page easier to read, or a formula telling the spreadsheet to work out a number using values from elsewhere. The power of spreadsheets is in this last category, formulae. You can make a cell's value depend on the value of cells above it, or to the left of it, and this value is then automatically updated if you make any changes to the other cells.

So how do you choose between the various spreadsheets? One difference is sheet size, i.e. the number of cells you are allowed to work with. You'll need a few hundred for home use, and 1000 or more for business use. Another area is the range of formulae that you can use – all spreadsheets allow simple column and row totalling, but with some you can get complex statistical analyses too. As with all software, think very carefully what you will need before choosing.

Mini Office Professional *Amazing value!*

£29.95 • Database Software • 0625 878888

Mini Office is a suite of five integrated programs – database, word processor, graphics module, comms package, and a very good spreadsheet. Broadly similar to SuperCalc in operation with usual features of auto or manual recalculation, replicating of rows/columns, powerful range of arithmetic functions etc. Printout is a strong point - rows/columns can be put into italic/bold etc, and prints draft, NLQ or even sideways! Can't sort and can't just save data or structure of a spreadsheet, but maximum size of spreadsheet is claimed to be 320k. You can use the data from a spreadsheet in the graphics module directly, though the manual is pretty useless at telling you how to do this.

PLUSES • MINUSES

- □ Good, full-featured easy to use spreadsheet
- □ Prints in draft, NLQ or even sideways
- □ Maximum size of spreadsheet 320k
- □ Can transfer data directly to graphics module
- ※ Manual is little more than an index of commands
- ※ Working out how to transfer data to graphics module requires a lot of inspired guesswork
- ※ 'Save' options not as versatile as SuperCalc

ScratchPad Plus

£59.99 • Caxton • 01-251 9494

If you want a traditional spreadsheet, ScratchPad Plus has most of the features you could want and more. Using "virtual memory" means you can have a huge data area, and the screen can be divided into windows to view different parts at the same time. Many of the commands bear a remarkable similarity to the big business spreadsheet Lotus 1-2-3.

PLUSES • MINUSES

- □ Virtual memory means you can have large spreadsheets
- □ Multiple windows mean you can see all the parts you want at once
- □ Good control over formatting
- □ Vast range of calculations possible
- ※ Documentation sorely needs an index
- ※ Screen prompts are cryptic: you need the manual to hand
- ※ No provision for automatic execution from files
- ※ No graphical output facilities

Cracker 2 *Boffin's best buy*

£49.00 • Software Tech/Newstar • 0277 22057

A spreadsheet designed with advanced calculating power firmly in mind, including statistical functions. The screen layout is totally defined by the user, and cell value calculations can almost be full programs, e.g DO ... WHILE. It might prove too complex if all you want is simple spreadsheet operations. The screen messages are very helpful though.

PLUSES • MINUSES

- □ Can cope with very complex formulae
- □ Flexible screen format defined by the user
- □ On-screen prompts are very clear
- □ Graphs/charts can be automatically produced
- ※ Documentation is large, but obscure and confusing
- ※ You've got to do a lot of work just to get started
- ※ Very complex for quick, simple applications
- ※ Needs some programming skills to get the most out of it
- ※ Free workspace is on the small side (17k) although memory is used efficiently

SuperCalc 2 *Best seller!*

£49.95 • Amsoft/Sorcim • 091 567 3395

The best selling spreadsheet, officially endorsed by Amstrad. SuperCalc 2 is broadly similar to ScratchPad Plus , and at least as effective, but it has a smaller workspace and is less flexible about the allowed spreadsheet dimensions. One big bonus is that you can store sequences of commands in files for repetitive calculations.

PLUSES • MINUSES

- □ Excellent manual – specific sections for beginners and experts.
- □ Sequences of commands can be stored and later run from files
- □ "Data Interchanger" allows you to transfer spreadsheet data to other applications
- □ Comprehensive range of calculation functions available
- □ Screen can be split into 2 windows
- ※ Spreadsheet is limited by memory size
- ※ No graphical output facilities

THE GOOD SOFTWARE FILE

SPREADSHEETS • GRAPHICS

First Calc
Good value!

£29.95 • Minerva Systems • 0392 37756

Touted as a quick and simple to use program for the beginner, this is nevertheless quite a powerful spreadsheet, with a large capacity, ability to replicate formulae, export etc. Really it's not vastly more user-friendly than the rest but a good value package all the same.

PLUSES • MINUSES

- ☐ A lot of program for the money
- ☐ Good tutorials with demo files
- ☐ Simple to use but reasonably sophisticated
- ✲ Not much easier to use than more powerful packages

Rotate
£24.95 • Proteus Computing • 01-748 2302

Rotate is a simple utility program to print out text files rotated through 90 degrees on the paper. This gives you more columns per page which will be needed for some programs, like large spreadsheets.

PLUSES • MINUSES

- ☐ Simple menu-driven program does just what it says
- ☐ Choice of four print fonts, which can be used to print unrotated files too
- ✲ The quality is nothing like NLQ (e.g. the ordinary "high quality" print option)
- ✲ Only prints plain text, no subscripts, underlining etc.
- ✲ No specific support for non-Amstrad printers

Job Estimating • Product Costing
£49.95 each • Cornix Software • 0462 682969

Both these programs aim to provide help to small businesses by keeping track of costs. You break down the job/product you are doing into small units and specify the cost of each basic component. The programs then analyse your profit margins and can produce printed quotes to convince customers you are superb value.

PLUSES • MINUSES

- ☐ Well written manual aimed at businessmen not programmers
- ☐ Simple and robust to use
- ☐ Changes in material cost instantly reflected in all quotes
- ☐ Job Estimating page headers make a neat way of doing on-the-spot quotes
- ✲ Can't add new components to a description after it has been set up
- ✲ Cost of one component can't be dependent on another
- ✲ Inflexible design of printed quotes might be inconvenient
- ✲ Generally only suited to smallish businesses

Pocket CalcStar
Good value!

£39.95 • Davis Rubin Associates • 0386 841181

A fairly traditional spreadsheet but with a few surprising features. It's not particularly large or fast, but is attractively priced and has all the basic functions. Can form part of an integrated system with the other Pocket products. A safe buy for the first-time user, and the documentation is up to the usual high MicroPro standards.

PLUSES • MINUSES

- ☐ Good range of mathematical calculation functions
- ☐ Good documentation – sections for beginners and reference.
- ☐ You can present a course of cells to visit, for form filling.
- ☐ Can be integrated with other Pocket products, eg ReportStar
- ✲ Screen size is very small – at most 15 spreadsheet rows, and normally only 10.
- ✲ No auto-recalculate facility
- ✲ It's not very fast
- ✲ You can't type heading text etc. over adjacent columns

Multiplan
£69.99 • MicroSoft NewStar • 0277 220573

A well established package with all the features you would expect of a reasonable spreadsheet — it just lacks that something extra that recommends some of the newer ones. No support for command reading from files, or for 'virtual memory'. Adequate, but there are better for the money. And the manual can kill at twenty paces!

PLUSES • MINUSES

- ☐ Functions easily entered by menu selection
- ☐ Full range of features and functions
- ☐ On-screen help text is available as you go
- ☐ Sheets can be interlinked and data transferred between them
- ✲ You need a computer science degree to understand the manual
- ✲ No support for automatic execution
- ✲ Workspace is limited by CP/M memory space
- ✲ Printer output a bit cumbersome
- ✲ Items on the screen are purely pixels, not distinct elements like in DR Draw or Microdraft
- ✲ No positioning of items by numeric co-ordinates for accuracy.

Master Paint
£19.95 • Database Software • 0625 878888

A WIMP environment graphics package (windows, icons, menus, and pointer) which will run with Kempston, AMX or Electric Studio mice. Usual facilities for drawing curved or straight lines, polygons, boxes, circles and ellipses, and a host of 'fill' patters. 'Undo' function and eraser facility, plus the ability to zoom in on a part of the picture and make pixel-by-pixel changes

PLUSES • MINUSES

- ☐ WIMP environment makes it easy to use
- ☐ Zoom function lets you fine-tune your pictures
- ☐ Good range of effects
- ☐ Undo and erase facilities
- ✲ Text fonts are boring
- ✲ Can't move large blocks with the copy function

Master Scan
Unique!

£69.95 • Database Software • 0625 878888

A device which clips on to your printer head and scans pictures, sending the digitised result to disc. You can then use the pictures in desktop publications or in other graphics packages, such as Master Paint. Very useful for newsletter production but the claims for Master Scan as a low-cost fax machine are grandiose - the quality of scanned text is poor.

PLUSES • MINUSES

- ☐ Simple method of getting good digitised graphics
- ☐ Suitable for all desktop publishing programs
- ☐ Contrast control useful
- ✲ Quality of scanned text is bad – no good for faxes
- ✲ Problems with illustrations containing lots of grey

Stop Press
£49.99 • AMS • 0925 413501

Though touted as a DTP program, Stop Press is an excellent graphics package. Can present data in the form of graphs, pie charts etc., and has the usual range of facilities to draw and fill triangles, boxes and so on plus a very good 'zoom' option which lets you examine the effect of changes in great detail.

PLUSES • MINUSES

- ☐ Good graph drawing facilities
- ☐ Can design your own area fill patterns
- ☐ Good range of clip art, which you can modify if you wish
- ☐ Can superimpose one image on another
- ☐ Works with AMX and Kempston mice
- ✲ Is also a good DTP package
- ✲ Undoing wrongly placed text is difficult

GRAPHICS

You can use a graphics package to create and store diagrams and drawings on disc, to be amended, adjusted or printed out at will. There are three main types of graphics package: art, technical drawing and graph plotting programs. In art packages the emphasis is on designs and pictures, with freehand drawing facilities, a selection of pretty text fonts and a variety of patterns to fill areas with. Technical drawing packages concentrate on shapes, such as squares and polygons, lines and labels. Finally graph plotters will take your data and turn them into bar charts, pie charts and so on. 9512 owners will have to buy a dot matrix printer to do all this, of course.

DR Draw
£49.95 • Digital Research • 0635 35304

This is a drawing utility, which allows you to compose designs from circles, polygons, lines and a wide variety of shadings and styles of text. It's very cumbersome to use unless you also have a light pen or a mouse, and overall not very friendly. Not recommended unless you're ready for some hard work.

PLUSES • MINUSES

- ☐ When pushed, it can produce very neat diagrams, even on the standard PCW printer
- ☐ Good, professional manual (although no mention of Amstrad specifics)
- ✲ You need CP/M expertise to get it installed and going
- ✲ Painfully slow screen handling
- ✲ Difficult to use by keyboard alone -- you must buy a lightpen or mouse

DR Graph
£49.95 • Digital Research • 0635 35304

A rather specialised package, specifically for presenting complex data in graph form. Can produce line graphs, bar charts, pie charts, scatter plots, text, and compositions of any mixture of these. Very flexible, and easily operated by menus, but really needs a graph plotter to do it justice.

PLUSES • MINUSES

- ☐ Can read data from certain spreadsheets (e.g.SuperCalc)
- ☐ Extensive annotation and text placing is possible
- ☐ Good, professional manual (although no mention of Amstrad specifics)
- ☐ Supports a colour graph plotter as an output device
- ✲ You need CP/M expertise to get it installed and going
- ✲ There is no way of joining points by a smoothed curve

Art with Lightpen or Mouse
£79.95 or £129.95 • Electric Studio • 0462 675666

Ostensibly you are buying a piece of hardware -- a light pen, or a mouse, that can be used with many PCW graphics programs, like DR Draw. In practice, its main use is with the software that comes with it, a very good picture drawing package. You can freehand draw, get airbrush effects, create polygons and circles, and move blocks of pixels. Great fun.

PLUSES • MINUSES

- ☐ Light pen hardware is a simple module that slots onto the back of the PCW
- ☐ You can draw by freehand pen control or with cursor keys for accuracy
- ☐ Menu selections are easy to understand
- ☐ Full range of functions for area filling, shading and spraying
- ☐ Blocks of pixels can be moved and copied
- ✲ You would need to know your way around CP/M to use the lightpen itself with other graphics programs

Graphics Operating System
£69.95 • Mirrorsoft • 01-377 4645

This is a library of machine code routines for programmers to use. It is essentially the guts behind Fleet Street Editor Plus, and provides you with a set of routines to draw menus, read a mouse, fill areas and so on.

PLUSES • MINUSES

- ☐ Good range of general purpose graphics functions
- ☐ Routines can be called form most programming languages
- ☐ Functions to drive mice and menus are provided
- ☐ 'Fill' command can be customised
- ☐ Consistently designed and documented calling mechanisms
- ✲ Manual is weak on tutorial content
- ✲ Only leaves you with 17k of workspace in BASIC
- ✲ 'Fill' command is slow
- ✲ Lots of PEEKs and POKEs make it longwinded
- ✲ Priced for company programmers not home users

Graphics and Everything
£19.95 • CP Software • 099382 3463

The full title is 'All you ever wanted to know about graphics, the universe and everything on PCW 8256/8512 ... but were afraid to ask.' Phew. A wide range of little programs to do graphic things on the PCW like smooth scrolling, defining windows, moving sprites around. The programs are written in assembler, with the source code provided if you want to see how to program them for yourself. Great for programmers.

PLUSES • MINUSES

- ☐ Wide range of useful functions
- ☐ Code can be used from BASIC, machine code, or any language

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THE GOOD SOFTWARE FILE

EDUCATIONAL • COMMUNICATIONS

- ☐ The assembler source code is supplied
- ☐ Inexpensive
- ☐ Good manual
- ■ A bit long-winded to use from BASIC
- ■ No way of loading just the routines you want

ExBasic — *Simple to use*
£11.45 • Nabitchi Computing • 051-708 8775

A utility program which augments Mallard BASIC's commands, allowing you to use quite sophisticated graphics functions. You can draw or erase lines, circles or dots, save and load screenfuls of data, pause, beep ... all with commands like PRINT USING "#,###.##";num — no machine code or POKEs!

PLUSES • MINUSES
- ☐ All functions done by simple BASIC PRINT statements
- ☐ No machine code knowledge needed
- ☐ Good range of simple drawing commands available
- ☐ Can save and load images once you've got them right
- ☐ Very cheap!
- ■ Not quite fast enough for proper animations/games programs

Video Digitiser
£99.95 • Electric Studio • 0462 675666

A black box which plugs onto the expansion port at the back of the PCW, into which you put a video camera or video recorder. It will then 'digitise' the picture it receives and display it on the screen.

PLUSES • MINUSES
- ☐ Automatically picks a good contrast level for the display
- ☐ Can store pictures for the Light Pen or Mouse to work on later
- ☐ Can print out on a full A4 page
- ■ Can't take simple TV signals – video only

Microdraft
£79.95 • Timatic Systems Ltd •0329 226727

This package is essentially an electronic drafting board. Lines, circles, polygons, text and so on can be accurately placed on a page, and then scaled and rotated en masse. Overall an excellent package, comprehensively designed , but a few niggles like not being able to rotate text, not being able to undo mistakes easily, and hassle with print formats.

PLUSES • MINUSES
- ☐ Elements can be positioned very accurately
- ☐ Discrete elements can be grouped into blocks and manipulated
- ☐ Good comprehensive manual (except that it refers to the CPC keyboard)
- ☐ Supports output on proper graphic plotters
- ■ Mistakes very difficult to undo
- ■ Difficult to print anything apart from A4 'landscape'
- ■ Rotation facilities weak – you can't rotate text at all
- ■ Menu structure very involved

Grafpad with Powercad
£149.50 • Grafsales • 0923 43942

A system allowing both freehand and technical design via a special pen. This works from a 'digitising tablet' which takes over the functions of the keyboard and fits into the expansion port at the back of the PCW. Wide range of features including object move, ability to define symbols for future use and sophisticated zoom feature for fine adjustments. Its potential is enormous though at the price may be limited to specialist drawing office applications

PLUSES • MINUSES
- ☐ Combines best of freehand and technical drawing facilities
- ☐ Zoom feature allows drawing in of fine details
- ☐ Accurate
- ☐ Sophisticated, professional package
- ■ Expensive – not really meant for the private user

VIDI PCW
£99.95 • Rombo Productions • 0506 39046

A very similar package to the Electric Studio digitiser, not much to choose between the two. Rombo's works with the Fleet Street Editor, Electric Studio's with Newsdesk International.

PLUSES • MINUSES
- ☐ Text can be inserted from within the program
- ☐ 16 levels of shading
- ☐ Can print images to screen in defined order and time apart – great for presentations
- ■ Unhelpful manual

to be re-released. You can set time limits for moves. — VALUE VERDICT ■■■■■

Colossus Chess 4.0
£15.95 • CDS Software (0302 21134) • All PCWs

A very strong chess game which manages to use time which you spend thinking to plan its strategy. Bags of features, including blindfold games.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Cyrus II Chess
£15.95 • Amsoft (0277 230222) • All PCWs

Chess game with a stunningly detailed 3-D display. The play is quite strong, with several handy features like allowing you to take back a move.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
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Distractions — *Good value!*
£19.95 • Design Design • 8000s only

Three futuristic arcade type games in one combine to form a basic but good value disc. From 2, South Block, Riverside Way, Sawbridgeworth.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Fairlight
£14.95 • The Edge (01-831 1801) • All PCWs

Fine 3-D graphic adventure with similar screen display to Batman. You explore a castle prison, battle with numerous enemies and solve puzzles.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

GAMES

Batman — *Great fun!*
£14.95 • Ocean (061-832 6633) • 8000s only

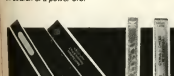
4-D animated graphics as you guide Batman around Gotham City, looking for hidden parts of the Batcraft. Good range of hazards, and even a tune!

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Blackstar
£14.95 • CRL (01-533 2918) • All PCWs

A traditional text adventure with large playing area. You explore Castle Blackstar and its mysterious caverns in search of a power orb.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■



Bounder — *Full of bounce!*
£13.95 • Gremlin (0742 753423) • 8000s only

A graphics bouncing ball game. You have to direct the ball over a treacherous network of squares & hexagons. Persevere – or use the cheat mode!

LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Brian Clough's Football Fortunes
£17.95 • CDS (0302 21134) • All PCWs

A cross between Monopoly and Football Manager, combining board and PCW. Go for league and cup success – but keep the bank manager happy too!

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Bridge Player 2000
£19.95 • CP Software (099382 3463) • All PCWs

A few of the bids it makes seem a little strange, but as bridge programs on computers go this is pretty good. Claims not to cheat, even though it deals!

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

3D Clock Chess — *Strongest play*
£15.95 • CP Software (099382 3463) • All PCWs

The '3D' refers to a three dimensional display of a chess board on the screen. Good chess program, soon

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■

The Fourth Protocol — *Sinister but fun*
£15.99 • Ariolasoft (01-386 3411) • All PCWs

An icon-driven adventure that works superbly well. Stop the Russians from setting off a nuclear device in the UK. Three excellent games on the one disc.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Gnome Ranger — *Different*
£14.95 • Level 9 (0344 487597) • All PCWs

You follow the adventures of Ingrid Bottomlow, the intrepid gnome, through a fairy tale landscape full of compelling puzzles. Humorous and rather quaint.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Graham Gooch's Test Cricket
£19.95 • Audiogenic (0734 303663) • All PCWs

A good cricket match simulation with animated graphics. You can select your own teams, control the speed of bowling and striking. For cricket fans.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Guardian and Blagger
£14.95 • Alligata (0742 755796) • 8000s only

A two game package giving the lighter side of game

GRAPHICS ■■■■■

THE GOOD SOFTWARE FILE

GAMES

playing. Blagger is a platform burglar game, while Guardian is a classic space shoot-'em-up.

ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Guild of Thieves — *Sophisticated!*

£24.95 • Rainbird (01-240 8838) • All PCWs

To join the select Guild of Thieves in Kerovnia, you first have to show your worth by fleecing an island of all its treasures. An excellent adventure!

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Head Coach — *For NFL fans!*

£15.95 • Coda (01-789 9551) • All PCWs

You coach an American Football team, picking players and deciding tactics against real NFL teams and players. Incredibly detailed simulation – a must for NFL fans!

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Head Over Heels — *Superlative!*

£14.95 • Ocean (061 832 6633) • 8000s only

A superlative, compulsive 3D arcade adventure where you control either Head or Heels. Escape from Castle Blacktooth and free the Empire's enslaved planets.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Hitch-Hiker's Guide — *Hilarious! Superb!*

£24.99 • Activision (01-431 1101) • All PCWs

In many people's minds, the best adventure program ever written. Based on Douglas Adams' series, it is ingenious, hilarious and mind-boggling. A must!

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Hollywood Hijinx

£24.95 • Activision (01-431 1101) • All PCWs

A good skit on Hollywood and its conventions. Find ten treasures hidden in Aunt Hildegarde's beautiful mansion. Might not suit the British palate.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Knight Orc

£19.95 • Level 9 (01-631 5373) • All PCWs

You are an orc in this typical Level 9 adventure by the name of Gridleguts. An addictive game with lots of action, plenty to explore and mind-bending puzzles.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Leather Goddesses of Phobos — *Bawdy*

£24.95 • Activision (01-431 1101) • All PCWs

Lascivious, licentious and lewd – definitely not for feminists! An excellent adventure game, spoofing both sci-fi and Soho.With 3D scratch'n'sniff card!

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Lord of the Rings — *Hobbit's hobby!*

£19.95 • Melbourne Ho. (01-377 8411) • All PCWs

Excellent adaptation of the Tolkien classic. You take the role of Frodo or one of his group, and rove through Middle Earth meeting balrogs, orcs, wargs and all.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Lurking Horror

£24.95 • Activision (01-431 1101) • All PCWs

Something nasty is lurking down in the bowels of the George Edwards Institute of Technology – find it before it finds you! Another great game from Infocom.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Moonmist

£24.95 • Activision (01-431 1101) • All PCWs

An American Tourist's dream, set in a genuine haunted castle in Cornwall. A game which is strong on atmosphere and immensely playable.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

The Pawn — *Sophisticated!*

£24.95 • Rainbird (01-240 8838) • 8000s only

An excellent adventure with dozens of superb screen illustrations, zany characters and a host of baffling puzzles. Will keep you entranced for hours.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Scrabble — *Plays a mean game!*

£19.95 • Virgin Leisure (01-727 8070) • 8000s only

Excellent impleamentation of the famous game. 1 to 4 people can play the computer, which knows a fair few obscure words. Good graphical display.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Silicon Dreams

£19.95 • Rainbird (01-240 8838) • All PCWs

A trilogy of intriguing adventure games. You are secret agent Kim Kimberley saving Snowball 9 from almost certain doom! With a humorous novella.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Sorceror

£24.95 • Activision (01-431 1101) • All PCWs

Enter the world of necromancy and sorcery courtesy of Infocom.You have to find out the correct spells which will locate your missing master, Belboz.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Starglider — *Multi-faceted!*

£24.95 • Rainbird (01-240 8838) • All PCWs

A sophisticated shoot-'em-up with 3D vector graphics and a dose of strategy too. Your task is to save Novenia, helped by a complex playing guide.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Stationfall

£24.95 • Activision (01-431 1101) • All PCWs

Sequel to Planetfall. You explore a space station with your chums Floyd and the philosophical robot Plato. A great sci-fi adventure, a mix of 2001 and Star Trek!

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

Steve Davis Snooker

£14.95 • CDS (0302 21134) • All PCWs

Surprisingly realistic simulation of both pool and snooker games. Allows for spin, side, strength of shot. Good value, despite all the balls being greens!

ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Strike Force Harrier

£19.95 • Mirrorsoft (01-377 4645) • All PCWs

A combat simulation of a Hawker Harrier, designed in conjunction with British Aerospace. Very detailed and you'll need a few hours with the manual.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Tau Ceti — *Action and adventure!*

£19.95 • CRL (01-533 2918) • All PCWs

A superb game combining graphics, adventure, brainpower and shoot-'em-up. Your task is to sabotage Tau Ceti III's main reactor.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Tetris — *Addictive!*

£19.99• Mirrorsoft (01-377 4837) • All PCWs

You fit together bricks of various shapes that drop out of the sky at the bottom of the screen. The better the fit, the higher your score. Very addictive!

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Tomahawk — *Dynamic*

£19.95 • Digital Int. (0276 684959) • 8000s only

A sophisticated Apache helicopter flight simulator. Impressive cockpit view graphics as you engage in combat missions – can be used with a joystick too.

GRAPHICS ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

Very Big Cave Adventure — *Irreverent!*

£14.95 • CRL (01-533 2918) • All PCWs

An adventure spoof with plenty of corny jokes, like the credulous bull who guards a gully – the Gully Bull. Nice break from serious adventuring.

ATMOSPHERE ■■■■■
INTERACTION ■■■■■
CHALLENGE ■■■■■
VALUE VERDICT ■■■■■

NEXT MONTH

The guide continues next month with the categories of WORD PROCESSORS ACCOUNTS/PAYROLL, UTILITY and DTP software. The month after that will cover DATABASES, EDUCATIONAL and COMMUNICATIONS software, and the month after *that* it's back to this month's topics.

Our intention is to keep publishing the three parts of the guide in rotation, updating it each month to include all new products. If you would like to see other sections of the guide, back issues of 8000 Plus are available at £1.75 each from The Old Barn at Somerton.

Meanwhile, if you are aware of any significant omissions or errors in the File as published, please let us know. We intend to maintain it as THE authoritative guide to PCW software.

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- Chibase includes a simple text editor which enables you to enter and amend your record text on the screen. As you type in or amend your record text, you can nominate one or more words as keywords. A single key command nominates the word at the cursor as a keyword, and the word becomes highlighted.
- A single key command causes the edited text to be stored as a record on the database. The keywords will be stored in an index. The software uses the index to find records.
- You can selectively retrieve records by means of an enquiry which is just a list of keywords. Those records which include the listed keywords will be retrieved. You can also retrieve only those records whose keywords include some minimum number of the keywords in the list.

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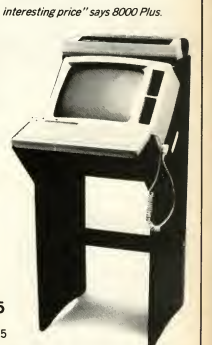
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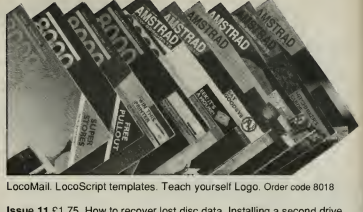
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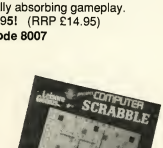


■ HEAD OVER HEELS

The incredibly-animated program from Ocean in which you control TWO separate characters, using their different abilities to solve some mind-bending puzzles. Huge playing area and probably the best graphics on the PCW. Plus totally absorbing gameplay.
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■ SCRABBLE

This will appeal to anyone who enjoys playing with words. A super enhanced dictionary and full board displayed on-screen means you get the full feel of this classic game. Play against friends or take the computer on. Can you beat your PCW at word processing?
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■ TETRIS

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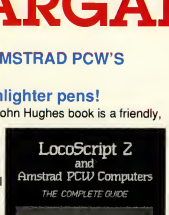
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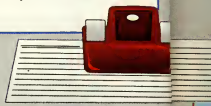
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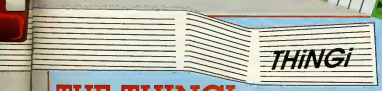
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POSTSCRIPT

An accumulation of amorphous apocrypha assembled and abbreviated by an alliterative Ed.

Four pages of hints, hows and humour on all things Amstrad. Amongst the many subjects on paper this month are LocoScript and laser printers, driving lessons and square roots. If you've got any problems with your PCW and its software, or you just want to sound off about the degenerate world we live in, get in touch. No problem is too small to baffle the experts.

Write to *PostScript, 8000 Plus, 4 Queen Street, Bath BA1 1EJ*, and have all your troubles solved. Sorry, but we can't reply to any letters personally – we're too busy writing the next issue!

Mouse Trap

As a relative newcomer to the PCW, if I have a LocoScript or CP/M problem to solve, it's not the manuals I go to but reliable 8000 Plus. But that's not to say that you don't make some errors now and then!

In February's edition I refer, of course, to your review of the Kempston mouse ("What, Ho, Jeeves!") and your final observation of its AMX relative. You give the impression that it's impossible to use the AMX mouse with CP/M programs and that it cannot drive GSX programs. Whereas, in fact, the AMX rodent is supplied with a GSX driver file (DDAMX.PRL) which if incorporated into your ASSIGN.SYS file will effectively drive such programs as DR Draw. Indeed, with a mouse, DR Draw becomes quite bearable.

CP/M programs such as Cyrus Chess and Multiplan, to name but two, can also be made to obey the mouse by the use of an RSX driver called AMX.COM which is supplied with the Desktop (not to be confused with Desktop Publisher) files. By incorporating this program into a PROFILE.SUB file the mouse can be made to emulate any of the keyboard keys you assign to it. It all sounds very simple, doesn't it? And indeed it is – but I'm afraid that you're not the only ones to suffer gremlins.

The AMX RSX driver also has a bug. Provided you are prepared to key in the mouse functions manually it works fine. But as soon as you attempt to save the instructions, when the program gives you the required prompt, things start to go wrong. If you attempt to call up the file again – the machine hangs up, totally. You have to switch off at the mains and re-boot. To make matters worse, if you attempt to use the utility again, the same thing happens. It's as if the program, in attempting to save its key functions, very neatly corrupts itself.

As you might guess, I've been onto Advanced Memory Systems again and again and... on the 16th October, John Simpson, their Technical Service Manager admitted that "there is a problem with the software". On the 7th January he was "still getting in touch with the software writers".

As you can see it's taking them some time to resolve. So come on 8000 Plus – do us readers another favour and use your influence to get them to sort the problem out before another four months go by and (I can't resist it) they come up with another tail!

John Stokes
Shrewsbury

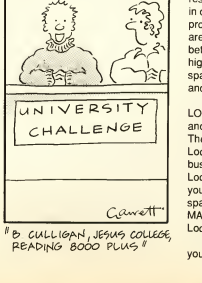
8000+ Look, we make the puns around here, OK? Thanks for extra info about the AMX mouse – our review copy dates from the product's first release a year ago, and the GSX files weren't on this. People who also bought the mouse in the early days can get a free upgrade by returning their Desktop master disc to AMS, with an explanatory note, marking the envelope 'Desktop GSX upgrade'. And John Simpson is still 'in touch' with the software writers concerning your putative bug, but he adds that so far you are the only person to report it.

Young generation

I have also been reading the letter(s) from J.Coleman in the February issue, and in reply to his second letter on readership age might I mention that I am just coming up to my fifteenth birthday and have been reading your magazine ever since issue three in December 1986, when I purchased my PCW.

Philip Turner
Banchory, Kincardineshire

8000+ That makes our age spread 14 to 79. Any more offers?



"B. CULLIGAN, JESUS COLLEGE, READING 8000 PLUS"

Thick is beautiful

I take exception to the claim of D B Minterne of Dorchester to be the World's no 1 Computer Thicko and would like to challenge him for the title. I bought a copy of The Desktop Publisher six months ago hoping to enhance parish publications, but in spite of going through the tutorial programme over and over again I still haven't discovered how to produce or print one single document. If anyone around Newport reads this and would like to teach a computer dunce how to use this software, please let me know.

Rev D W Cooling
St. David's Rectory, Bettws Hill, Bettws, Newport, Gwent NP9 6AD

LocoChar corrections

As I designed and programmed the LocoScript 2 'LocoChar' character designer utility I was most interested to read your enthusiastic coverage of it in the February issue. There are however, a few errors and omissions in the article which I would like to draw to your attention, for the benefit of readers who may be already using, or considering obtaining this program.

You say that the third line of hyphems in each grid marks the lowest extent of a descender. In fact this guideline shows where automatic underlining will be positioned, and characters with full descenders (such as g,p,q,y) should extend right to the bottom of the grid. This is achieved in the printer patterns by selecting the "SHIFTED" option (type [f7] S [ENTER]); you can still only use 16 (NLQ) or 8 (DRAFT) of the grid rows, but the "out of bounds" rows are now at the top.

The suggestion to only use rows between the top and bottom guidelines for half-line spacing graphics to join up is unnecessarily restrictive; in fact using any 12 (or 6 in draft) adjacent rows will work provided all the graphic elements are consistent, and it would be better to start and finish two rows higher to give more even vertical spacing between top border, text and bottom border.

The files LOCOCHAR.2 and LOCOCHAR.3 are in fact parts of 2 and 3 of the BASIC program. These are required on the LocoChar disc, but have no business cluttering up your LocoScript 2 start-of-day disc. If you remove them there is enough space for up to four extra MATRIX.# files (or three if you have LocoMail and LocoSpell as well).

While in the f6 'Settings' menu you can also change the default

settings for the printer and for new documents to specify the new character set; though any already existing templates will still need to be changed with Document Setup.

The 'secret' of getting at the other characters is that it can't be done. The print patterns for the 16 special characters are stored in a literal binary form which LocoChar can readily modify. The other 400 odd character patterns are compressed in a complicated way which approximately halves the space they occupy both on disc and, more importantly, in memory while LocoScript is running, but makes it quite impossible to change individual patterns without reorganising the whole set.

Finally, we have a number of requests for details of the dot patterns used in the other characters, particularly the alphabet, so that people can design matching versions with extra squiggles for obscure scientific notations or special language requirements. To meet this need we will be printing a selection of the patterns in future issues of our own newsletter, *Script*.

A F Bush
Locomotive Software, Dorking

Cracker cracks

I should be grateful if you could help me with finding out if NewStar have sent me the correct version of The Cracker. I saw the advert in your magazine for Cracker 'Turbo', and ordered it. I am having a lot of difficulty with it since on some occasions I get only gibberish when I try to boot it and on others I have had the description come up that means I am dealing with the Z80 version.

Most often the caption reads:-

```
The Cracker
Copyright (C)
1985 I.W Searle
Turbo VER-2.31f
```

If this is the up to date version that I have paid for then so be it but the manual is for 'Edition 3 April 1986 Program versions 2.33 onwards.'

I have written to NewStar but have not had an answer.
Gordon Scott
Stockport

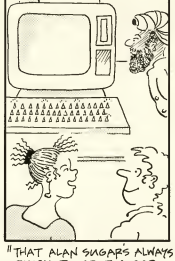
8000+ *We've been sent a review copy of Cracker Turbo, which says it's version 2.31h, but still says 1985, so I guess yours is the right version. NewStar say that the only real change is that it's been reprogrammed to be much faster; they are working on a new manual, but whenever we ring up to check the new version it's always 'due out next month'. In the meantime the old manual – which is what you have – covers all the main functions. Incidentally, did anyone else spot on the Cracker Turbo advert that some functions in the new version were 'over 100% quicker' than the old version? Do they really run in less than no time at all?*

On the board talk

I have just purchased a Linnet modem, RS232 interface to connect to my Amstrad PCW256 and Mini Office Professional from the Amstrad computer show at the Alexandra Palace.

I am very interested in getting the most from this piece of hardware. I have read a lot about public bulletin boards. Do you have a list of some of the numbers that I can dial?
Ben Lockett
Newquay, Cornwall

8000+ *A handful you could try are: 08926 61149 (run by the Public Domain Software Library in Crowborough); 0767 50511 (Cambridgeshire); 0895 42016 (West Drayton); 0865 882872 (Oxford). Most bulletin boards automatically sense what speed you are using, so you can use 300/300 or 1200/75 safely. On your first use you'll probably only get limited access until the system operator has given you a proper identity and password. Once you've got onto a BB you'll probably find other people who know more numbers, so you can spread out.*



Computer trouble

I have purchased your magazine for over 18 months, having found it most helpful in my early days with an Amstrad 8256 and a recent upgrade to an Amstrad 9512.

Following your January issue, I decided to purchase a Dot matrix printer choosing the Panasonic KX-P1081 which was given high marks. I take this home and then find I am faced with making it compatible with my Amstrad 9512. The instructions given both with the printer and the Amstrad manual are written in some advanced form of 'computer gobbedegook' and on first meeting are totally incomprehensible.

If I buy a car, I am provided with a simple, illustrated and easy to understand drivers manual which explains in simple terms how to operate the various controls given me. More technical details as to the car operation and servicing are found in a separate 'workshop manual'. The computer world, however, seems totally unable to understand this fact, and insists on writing instructions which assume high technical knowledge and a prior expertise. Whilst I appreciate that this might – and has – spawned a separate industry, I for one, would certainly welcome the realisation within the industry that they could sell much more hardware and software if they stopped thinking 'computerese' and began thinking in simple English.

I hope to persevere with making my new printer compatible with my existing equipment – no thanks to the instructions available. I guess – and probably am not far wrong – that the standard settings given in LocoScript 2 can be easily adapted to the Epson Printer, and would welcome this being given me (or published) in simple and easy to understand steps.
Philip J Burnet
Teddington, Middx

8000+ *Specifically for your problem you'll probably find the instructions in the LocoScript 2 manual more relevant than anything in the printer manual. Using the DMP printer driver for LocoScript should drive the Panasonic quite acceptably.*

I only half agree with your complaints about computer manuals. Many of them are terrible, and there's always room for improvement, but your analogy with cars doesn't really hold up. You probably spent over £100 on a training course for your car, ie. driving lessons, and if you spent the same on computer training you would undoubtedly find some of the fog clearing. Car manuals don't tell you anything about the art of driving, they assume you already know the conventions of road safety.

What the problem really is, it seems to me, is that cars have a totally standard way of working. If you can drive one car you can drive any car. This is most emphatically not the case with computers, and there seems no prospect of any standard emerging.

Assemblers' assembly

I would be grateful if you could spare me a few lines in your excellent magazine to ask your readers if any one would be interested in forming a 8080 assembly language club.

I realise that it is not your policy to delve too deeply into these matters in the magazine itself, but I am beginning to feel as if I am the only one using this language!

I am quite conversant with 8080 and CP/M on the PCW 8512, and have written a few programs mainly for my own use.

If any one is at all interested, drop me a line and lets see what we can work out.

I would be quite willing to pass on any tips that I know of, (and maybe pick up a few tips myself!)
W A Whittaker
Bakewell, Derbyshire

Lateral thinking

I should be grateful if you could give me a little information. On the front cover of the January '88 issue of 8000 Plus, there was a photograph showing a bar chart produced on the PCW printer. What caught my eye was not only the apparent high quality of the graph but also the fact that the legend for the Y-axis was rotated to run parallel to that axis. I have been looking for a high quality graph program for some time and should like to have details of the software used to produce that bar chart.

Whilst writing I should like to comment on a couple of products listed in the Good Software File in the same issue. Firstly, one of the most serious disadvantages of the DR Graph program is that it cannot produce a £ sign, which is not mentioned as a minus for the product, although the inability to produce smooth curves is. Both these are of importance to commercial users producing sales forecasts, etc.

I have been in touch with Digital Research in the hope that it was possible to tinker with the program to produce the £ sign, as one can with Supercalc 2, nothing can be done to overcome this particular deficiency, but I wonder whether any of your readers have found a solution.

The second product is 'Rotate' by Proteus Computing, which I bought some fifteen months ago and which has languished in a cupboard virtually ever since. As you say in your review, the quality is nothing like NLQ, but more seriously, the time taken to print and the sheer length of a print-out means that no one would use it for large spreadsheets as you suggest.

To give an example, a SuperCalc spreadsheet printed at 17 cpi being 7.9" wide will fit comfortably on a single sheet of 11" continuous paper, whereas the

Rotated equivalent occupies 14.1" of continuous paper, a size which from the point of view of reproduction would only just fit on an A3 sheet. I did try to reduce the width/length of the Rotate print-out by adjusting the character width to the minimum setting of 6/72, but found that the characters then touched one another and the output was almost totally illegible.

One last question on the matter of graph-plotting software – can I assume that those programs that you list in The Good Software file are capable of plotting smooth curves unless it specifically says otherwise, as in the case of DR Graph.

Peter Kyne
Herne Bay, Kent

8000+ *The cover photograph you refer to was made up using NewStar software's Cracker 2. This is a spreadsheet program with the ability to present its results graphically. NewStar have recently replaced Cracker 2 by Cracker Turbo, but it tries the same things.*

As to the business of printing sideways, Rotate is making the best of a difficult job. The fact is that the PCW's printer was designed to print horizontally not vertically. Printed characters are taller than they are wide, so when you try and print them sideways on they don't fit in the same space. As a result, sideways-printing programs print text as rows of dots like graphics, which never look as good as the normal character fonts.

DR Graph is just about the only specialist graph-drawing package (other 'graphics' packages in the Good Software file are mainly for drawing pictures with). Cracker Turbo, Stop Press and Mini Office Professional all have simple graph drawing capabilities.

Software on 9512s

I have purchased a PCW 9512, mainly for wordprocessing but I have also been surprised by the plethora of other software available. After the initial 'breaking in period' I am now reasonably adept at LocoScript as well as toying with Dr Logo and Mallard BASIC.

I have been able to iron out most of my difficulties myself – after a few frustrating hours. However I seem to have one insoluble problem.

After seeing a review of a game called 'The Pawn' in 8000 Plus and noting that it was suitable for all PCW's I purchased it. Following the instructions with the game I first made an 8000 copy utility. Both sides of the 180k disc copied across without turning the disc around which is what I expected, as I understand that the 9512 reads both sides of discs simultaneously. However, when I tried to play the game, at an early stage the message appeared to load side B of the disc! This surprised me as I knew that side B had already been copied onto the 720k disc, confirmed with DIR. On attempting to play the game with the master disc, it plays perfectly when the (180k) disc is inserted the other way around at the appropriate time in the game. Despite numerous attempts I have been unable to use the 720k disc. Is it necessary to copy the master onto another 180k disc on a borrowed 8000 machine and use this or am I missing something simple in the transfer of the data to the 720k disc?

Dr S N Atkinson
Whitchurch, Hants

8000+ *Normally, using 8000COPY to copy software files onto a 9512 disc would be the right thing to do. However, with the Pawn you can't do that because the original master disc has files of the same name on both sides. When you copy both sides onto the same new disc, one file gets erased when you copy the other of the same name over it.*

If you just run the program from its original disc it'll be OK, or you could store each side of the Pawn master disc on different 9512 discs, and swap them when prompted. The 9512 can run programs quite happily from 180k discs, the only thing it can't do is write to them, so when you want to save your game position you'll need to put in a real 9512 disc to store it on.

PCW software will always be supplied on 180k discs, involving 9512 owners in tedious disc transfers, because it's the only format that all models of PCW can read. However, let's hope that software producers bear in mind this potential 9512 problem when choosing their file names.

2+2=5

I think my Amstrad 9512 can't do its sums. In BASIC I tried the square root of 999999. It said 999.9991, but the correct answer is 999.9995.

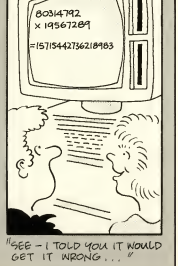
Am I wrong or is it the computer and if the latter why? Perhaps your readers may discover some other large numbers which are just too much for the Amstrad – I suspect I've already found some.

Like me it's bang on with the easy stuff like the square root of 9 and 64. Unfortunately like me it can't work out the large numbers.

Should I take it back while it's still under guarantee, or are they all the same?

Murray Wren
London SE3

8000+ *I'm afraid they'll all be the same, it's a fundamental limit on the machine. Because there are an infinite number of numbers, computers can't store every possible one with total accuracy. The various compromises made in designing the PCW's BASIC mean that you are unlikely to get more than 6 significant figures of accuracy out of it (ie. the seventh digit and beyond in any calculation may well be wrong). This amounts to a error in your sums of about 0.00005%, which is good enough for most people! If you stick to simple arithmetic (+, –, * and /) on integers between –32768 and +32767, BASIC will get the results right since these numbers are stored exactly by BASIC.*



Any ideas, please?

Peter Ingle
St Leonards On Sea, E. Sussex

8000+ *You could try using a different daisywheel. This may sound silly, but different typefaces (like Courier) may have a sharper cutting effect on impact. Also, different brands may be made of a more rigid plastic which cuts better.*

Dramatic suggestions

In these days of widespread PCW ownership and Public Domain/Shareware on the one hand and Amateur Dramatic Societies on the other, how about the following suggestion?

There must be a large number of plays (especially one-act ones) sketches and the like which are not first-rate, or even second-or third rate, but which nevertheless would be suitable for presentation by small Dramatic Societies, WI's etc.

If these otherwise unpublishable works were put on disc on a shareware basis with suitable copyright warnings, then the type of group mentioned could print out a sufficient number of copies.

The author would win – a few pounds direct would surely be worth more than the royalties from the sale of a few published copies; the groups would win as the cost of purchasing, say 12 copies at £3.75 each for a three night run (plus performing royalties) can be prohibitive. The dramatic publishers would not lose as many of these works would undoubtedly be publishers' rejects.

Comments, both from your readers and from yourselves/ D. Langford on the legal and copyright front would be most appreciated.

Trevor G James
York

8000+ *I can't think of any legal or copyright objections as long as the authors all agree. The snag is that the person running the setup would have to read all the plays and make some judgement on content and quality, which sounds like hard work. After all, on a list of hundreds of unknown plays there has got to be some way to choose likely ones to perform without someone from the dramatic society having to read every single one on the offchance!*

Cutting stencils

Imagine, if you will, the following scenario: yours truly, to his great delight, reads in DIY DTP (8000 Plus, December) that "the 9512 daisywheel will cut stencils no problem".

I therefore sit down at Joyce and type in the 12 A4 sides of my club magazine and spend many hours redesigning the layout, spell checking and then printing it out on plain paper – looking very good so far.

I then take out the ribbon cassette, set the printer impression to high, cut the stencils and finally get the Roneo out and run them off. Here comes the crunch – the resulting copy is rather faint and just readable, compared with the crisp, dark image produced from the electric typewriter, which obviously has a far greater impression force than the printer.

We cannot afford to have the stencils cut electronically and I really don't want to go back to the electric typewriter, with the inherent problems of spelling errors, etc.

Can it be PEEKed?

Can anyone help me with this? I run a BASIC program on my 8512 which outputs a variable number of lines of between ½ and ⅔ of a page. To keep it tidy I don't want a single run's output to carry over the page. The program counts the lines it produces but I have to look at the printer status line to decide whether to form feed before printing. How do I get the program to do this for

itself?

Probably on the same subject, I am new to Amstrad PCWs and BASIC and would like to know where and what I can PEEK and POKE. Can you recommend a book that will tell me what is where?

Mike Roberts
Eaton Socon, Hunts.

8000+ *The best way to do printer form-feeds in BASIC is by printing the escape code for a form-feed, 12. Use the command* `LPRINT CHR$(12)`*, the printer will skip to the top of the next page without you needing to keep track of which line it was on.*

I don't know of any way to PEEK the line the printer is on. There are some technical CP/M books around (eg. 'The Amstrad CP/M Plus' published by MML Systems, or 'The CP/M Handbook' by Heinemann), but they don't list PEEKs and POKEs as such. Inventive programmers can do quite a lot of special effects like inverting the screen colours by printing 'escape codes', as listed in the 'Terminal Characteristics' appendix of the PCW manual.

There's a definite gap in the book market at about the level you want. There are plenty of idiots' guides out there, but then the next stage up are really detailed books about CP/M and machine code. If one of the many publishers produced an intermediate level technical manual for the PCW it would go well.

Random thoughts

I did some BASIC programming whilst at school, on Spectrums and BBCs. I have been trying to write a short BASIC program to generate six random numbers between 7 and 18. Despite trying your tip about entering PEEK 65404, I am still stuck. If I simply RND, then I get the same sequence of six numbers each time. If, however, I use the PEEK you suggested, I get six of the same number! Needless to say, of course, it's the same number every time I run the program. HELP!

Mrs Rae Glass
Mosstodloch, Moray

8000+ *Oops! We must have misprinted the number to PEEK. Here's a program to generate six random numbers for you:*

```
10 RANDOMIZE PEEK(64504)
20 FOR i=1 TO 6
30 PRINT RND(1)
40 NEXT
```

Playing squash

Sometimes I have some bright ideas.

"Genius!" I said to myself some time ago (I'm prone to such attacks), while fiddling with my two and only software games, "I'll get my brother to contribute to my PCW software".

So patiently and knowingly I enumerate the advantages of the PCW (Keywords; textprocessing free, printer included etc etc) to my brother a future chemist.

"Really?" says he truly impressed. "You mean I can include in my lab reports diagrams of complicated molecules?"

"Sure, look," I exclaimed, picking up the June Issue of 8000 Plus. "Here's an equatorial and an axial representation of the most complicated molecule I have ever seen. What more could you want?"

"A Benzene cycle," he retorted.

You can imagine the tedious evenings we spent trying to create a savable and usable benzene cycle. After numerous and useless, but quite artistic attempts, we gave up. Actually we never even managed to get the two stereoisomers right!

"Don't worry", I gaily announced to cheer him up. "I'll write to 8000 Plus, somebody in the PCW universe must have a workable benzene cycle".

"And what about my 2-Chlorotetraazophenathene?" said my brother drying up his tears.

"Shut up!"

So with the promise to write to 8000 Plus, I happily pocketed his contribution to the MasterScan Package. The MasterScan arrived, strangely enough, before this letter reached you.

I spent 10 feverish minutes tearing various pictures out of magazines (not yours) and searching the bottom drawers for photographs, in my anticipation to try out the revolutionary scanner.

Alas! My Great Dane after having patiently endured the scanner and a couple of hours of perfecting with MasterPaint, turned out more like a Dachsund on the hardcopy.

Surely (and seriously) there has to be a solution to this problem. One doesn't pay more than £60 for a screen dump routine, which additionally squashes the picture vertically!

Christian Lofberg
Brussels, Belgium

8000+ *You will be able to correct the aspect-ratio distortion if you are using a desktop publishing package. In most DTP programs, when you import a picture from disc (eg. created with MasterScan/Paint) you can stretch it to fit a box on your page. With a bit of trial and error you can work out how much to distort it by to correct the printout.*

Source for the goose

Is there a secret political message



"LEO – YOU'D BEST INVEST IN A SPELL-CHECKER"

lurking somewhere behind the construction of LocoSpell? As I was checking a letter recently, it told me that Rajiv Gandhi should be "rabid gander". That should do wonders for Amstrad sales in India. Do other readers have any examples of LocoSpell's instant character assassination of public figures?

D W Foster
Aberystwyth

Laser show

I hereby confess to (a) having a problem with my printer, hence the resurrection of my ancient typewriting beast for this letter (the print head is clogged up with gunge from a re-inked ribbon), and (b) having a problem in unravelling the mysteries of laser printers.

Specifically, I wish to be able to produce pages of text with very high quality. I have had 2 books published now, both in minority subjects, using printout from my PCW standard printer. The text was then reduced from A4 to A5 size, the result being acceptable but of course not up to the quality of typeset text. So what do I do for better quality? The answers would seem to be:

a) Give the disc to a suitable printer for direct typesetting. This is likely to be expensive, and difficult to find suitable printers able to do so from LocoScript 2.

b) Use a daisy wheel printer instead of dot matrix. This solution isn't very good since I do require the use of accented characters, different type styles like italic, and different pitches. With no pause command in Loco 2 to enable a new wheel to be inserted, buying a dw printer isn't likely to solve the problem.

c) Get a laser printer. At least, that's what I'm told would be useful. So now the questions:

If I wish to only produce pages of text (leaving spaces for diagrams or photos, ie. not desk top publishing with snip art or printed out diagrams), what solution do you suggest? I need to end up with camera ready copy for a printer. Loco 2 does support some laser printers, but... what is best? Why are laser printers better than any other sort? What interface is needed? and so on. Alternatively, who can supply laser printouts from Loco 2 discs which I could then paste up for a printer?

You've covered dm and dw printers in an article before; how about one on laser printers and their advantages (and disadvantages)? After, perhaps, a shorter answer in the letters column? Now, back to finding out how to strip down the printer to de-gunk the print head!

Chris Howes
Cardiff

8000+ *Finding a typesetter who can read Amstrad discs shouldn't be all that hard – I suspect these days most can read computer discs, and even if the one you ask doesn't read 3" PCW discs he should know a man who does. However, it's highly unlikely that they will be able to read LocoScript italic and pitch size codes directly – most typesetting software uses special conventions, so you'd have to re-mark all your files as your setter requires.*

The restrictions of daisywheel print, as you say, make it awkward to use, and the alternatives depend how much money you have. Laser printers work exactly like high resolution dot matrixes (about 300 dots per inch), and as long as you buy an Epson compatible laser it could be connected to LocoScript as per any other printer. Laser printers use a method similar to photocopying to print, and produce jet black results – there's no ribbon to fade out. However, even cheap ones cost over £1,000.

Maybe a compromise would be to buy another dot matrix printer with a typeface you prefer? Some of the new 24-pin printers (eg. the NEC Pinwriter P2200) can produce significantly better print than the standard PCW one, and prices start at around £400.

Name of the game

If you are proposing to astound us with your prophetic gifts on a regular basis ('Crystal Balls', Keywords, Feb) you might consider adopting the Nom de Verre of *Amstradamus*.

John Tallent
Totnes, Devon

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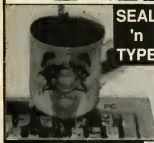
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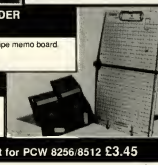


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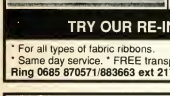


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